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COURSE OF STUDY

FOR ELEMENTARY SCHOOLS



DEPARTMENT OF EDUCATION

THE STATE OF COLORADO

INEZ JOHNSON LEWIS

State Superintendent of Public Instruction

DENVER



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DEPARTMENT OF EDUCATION

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FOR

ELEMENTARY SCHOOLS



1942

INEZ JOHNSON LEWIS

State Superintendent of Public Instruction

Denver



*I pledge allegiance to the flag
of the United States of America
and to the Republic for which it stands,
one nation indivisible,
with liberty and justice for all.*

TABLE OF CONTENTS

	Page
Foreword	xv
Acknowledgments	xvii
Personnel	xviii
Introduction	xx
Language Arts in the Elementary School	1
The Program in Reading.....	2
Why Reading Should Be Taught.....	2
How Reading Might Function in Other Activities.....	2
A Suggested Reading Program by Grades.....	2
Grade One.....	3
Suggested Outcomes.....	3
Suggested Procedures.....	3
Reading Readiness	4
Initial Guidance in Learning to Read.....	7
Grades Two and Three.....	13
Suggested Outcomes, Grade Two.....	13
Suggested Outcomes, Grade Three.....	13
Suggested Procedures.....	14
Use of Basal Readers.....	14
Reading Skills Needed in Study.....	15
Increasing Reading Vocabulary.....	16
Grades Four, Five, and Six.....	16
Suggested Outcomes, Grade Four.....	16
Suggested Outcomes, Grade Five.....	18
Suggested Outcomes, Grade Six.....	18
Suggested Procedures.....	19
Use of Basal Readers.....	19
Reading in Connection with Content Subjects.....	20
Grades Seven and Eight.....	30
Suggested Outcomes	30
Suggested Procedures	31
Use of Basal Readers.....	31
Reading and Other Activities.....	31
Increasing Vocabulary	33
Evaluating the Pupil's Work.....	33
Suggested Adaptations of This Program.....	35
Special Helps in Teaching Reading.....	35
Oral Reading.....	35
Diagnostic Work and Remedial Instruction.....	36
Bibliography for Teachers.....	38
The Program in Composition.....	39
Why Composition Should Be Taught.....	39
How Composition Might Function in Other Activities.....	40
A Suggested Program in Composition by Grades.....	40
Grade One.....	40
Suggested Outcomes	40

	Page
Suggested Procedures.....	42
Grades Two and Three.....	43
Suggested Outcomes, Grade Two.....	43
Suggested Outcomes, Grade Three.....	44
Suggested Procedures.....	45
Grades Four, Five, and Six.....	45
Suggested Outcomes, Grade Four.....	45
Suggested Outcomes, Grade Five.....	47
Suggested Outcomes, Grade Six.....	48
Suggested Procedures.....	50
Grades Seven and Eight.....	50
Suggested Outcomes, Grade Seven.....	50
Suggested Outcomes, Grade Eight.....	51
Suggested Procedures.....	52
Evaluating the Pupil's Work.....	52
Suggested Adaptations of This Program.....	52
Special Helps in Teaching Composition.....	53
Conversation and Group Discussions.....	53
Letter Writing.....	54
Making Reports.....	55
Book Reports.....	56
Telling and Writing Stories.....	57
Creative Writing.....	57
Grammatical Errors.....	58
Speech Errors.....	60
Individual Differences.....	61
Correct Forms in Written Composition.....	61
Bibliography for Teachers.....	64
The Program in Spelling.....	66
Why Spelling Should Be Taught.....	66
How Spelling Might Function in Other Activities.....	66
Suggested Spelling Program by Grades.....	67
Grade One.....	67
Suggested Outcomes.....	67
Suggested Procedures.....	67
Grade Two.....	68
Suggested Outcomes.....	68
Grade Three.....	68
Suggested Outcomes.....	68
Grades Four Through Eight.....	69
Suggested Outcomes.....	69
Evaluating the Pupil's Work.....	69
Suggested Adaptations of This Program.....	69
Special Helps in Teaching Spelling.....	70
Selection of Vocabulary.....	70
A Graded Spelling List.....	70
Suggested Procedures.....	99
Teaching Pupils How to Study.....	101
Bibliography for Teachers.....	101
The Program in Handwriting.....	103
Why Handwriting Should Be Taught.....	103
How Handwriting Might Function in Other Activities.....	103

	Page
A Suggested Handwriting Program by Grades.....	104
Grade One.....	104
Suggested Outcomes.....	104
Suggested Procedures.....	104
Grades Two and Three.....	105
Suggested Outcomes, Grade Two.....	105
Suggested Outcomes, Grade Three.....	105
Suggested Procedures.....	106
Grades Four, Five, and Six.....	106
Suggested Outcomes, Grade Four.....	106
Suggested Outcomes, Grade Five.....	107
Suggested Outcomes, Grade Six.....	107
Suggested Procedures.....	107
Grades Seven and Eight.....	108
Evaluating the Pupil's Work.....	108
Suggested Adaptations of This Program.....	111
Special Helps in Teaching Handwriting.....	111
Special Difficulties.....	111
Correct Position.....	111
Left Handed Pupils.....	111
Letter and Number Forms.....	112
Manuscript Writing.....	113
Bibliography for Teachers.....	114
Social Studies in the Elementary School.....	115
Why Social Studies Should Be Taught.....	115
How Social Studies Might Function in Other Activities.....	117
Suggested Social Studies Program by Grades.....	117
Outline of Social Studies Program by Grades.....	120
Grade One—Living in Home and School.....	124
Unit I. Our Home.....	124
Unit II. Our School.....	127
Unit III. Pets in the Home.....	129
Unit IV. The Food of the Family.....	130
Unit V. The Clothing of the Family.....	131
Unit VI. The Recreation of the Family.....	133
Grade Two—Living in the Local Community.....	134
Unit I. Community Helpers Who Provide Shelter for the Family.....	134
Unit II. Community Helpers in the Schools.....	137
Unit III. Community Helpers Who Protect the Family.....	138
Unit IV. Community Helpers Who Provide Food for the Family.....	139
Unit V. Community Helpers Who Provide Clothing for the Family.....	141
Unit VI. How Community Helpers Provide Recreation for the Family.....	142
Grade Three—Living in the Wider Community.....	144
Unit I. Types of Communities.....	144
Unit II. How Communities Help Each Other.....	149
Unit III. Making a Living in the Community.....	151
Unit IV. Transportation in the Community.....	152
Unit V. Communication in the Community.....	154

	Page
Unit VI. Indians of Colorado and the Southwest.....	155
Grade Four—Community Life in Other Lands.....	157
Unit I. Community Life in Colorado.....	157
Unit II. Community Life in a Mountainous Country— Switzerland	160
Unit III. Community Life in a Hot, Dry Country—the Sahara	163
Unit IV. Community Life in a Hot, Damp Country— Amazon or African Congo.....	165
Unit V. Community Life in an Island Community—the Hawaiian Islands.....	167
Unit VI. Community Life in the Cold Lands.....	169
Grade Five—Life in the United States.....	172
Unit I. Looking at Our Country as a Whole.....	172
Unit II. The Northeastern States.....	176
Unit III. The South Atlantic States.....	179
Unit IV. The North Central States.....	181
Unit V. The South Central States.....	183
Unit VI. The Mountain States.....	185
Unit VII. The Pacific States.....	188
Grade Six—Our American Neighbors.....	190
Unit I. Canada, Our Friendly Neighbor to the North.....	190
Unit II. Mexico, the Land of Contrasts.....	193
Unit III. Central America and the Islands of the West Indies	195
Unit IV. Preview of South America.....	196
Unit V. A B C Countries.....	199
Unit VI. The Central and Northern Countries of South America	201
Unit VII. Alaska	204
Unit VIII. Hawaiian Islands and Our Pacific Possessions.....	206
Grade Seven—Life on Other Continents.....	207
Unit I. History of Early Man.....	208
Unit II. Early Civilizations.....	211
Unit III. Europe and Its People.....	213
Unit IV. Africa	216
Unit V. Asia and Its People.....	218
Unit VI. Australia and the Islands of the Pacific.....	220
Grade Eight—Colorado and the Development of the United States into a Great Nation.....	222
Unit I. Colorado: Our State in a Modern World.....	222
Unit II. The Early Development of the United States as a Nation.....	228
Unit III. Growth and Expansion of the New Nation.....	230
Unit IV. Disunion and Reconstruction.....	232
Unit V. The Nation Progresses (1872-1935).....	234
Unit VI. The United States in the World Today.....	237
Evaluating the Pupil's Work.....	241
Suggested Adaptations of This Program.....	243
Transition from 1936 to 1942 Course.....	243
Combining Grades and Alternating Years.....	246
Special Helps in Teaching Social Studies.....	247
Individual Differences.....	247

	Page
Management of Group Activities.....	248
Management of Activity Period.....	249
Developing Social Studies Concepts.....	249
Collecting Materials and Locating References.....	250
Use of Community Resources.....	251
Map, Picture, Graph, and Chart Study.....	252
Materials for Suggested Units.....	252
Bibliography for Teachers.....	252
Physical Education in the Elementary School	254
Why Physical Education Should Be Taught.....	254
Objectives of the Physical Education Program.....	254
Free Play and Instructional Periods.....	254
The Schedule.....	255
The Program.....	255
How Physical Education Might Function in Other Activities.....	256
Suggested Physical Education Program by Grades.....	257
Grade One.....	257
Desirable Outcomes.....	257
Suggested Activities.....	257
Grade Two.....	258
Desirable Outcomes.....	258
Suggested Activities.....	258
Grade Three.....	259
Desirable Outcomes.....	259
Suggested Activities.....	260
Grade Four.....	261
Desirable Outcomes.....	261
Suggested Activities.....	261
Grade Five.....	262
Desirable Outcomes.....	262
Suggested Activities.....	263
Grade Six.....	264
Desirable Outcomes.....	264
Suggested Activities.....	264
Grades Seven and Eight.....	265
Desirable Outcomes.....	265
Suggested Activities.....	265
Evaluating the Pupil's Work.....	267
Suggested Adaptations of This Program.....	267
Special Helps in Physical Education.....	269
Equipment.....	269
Homemade Equipment.....	270
Organization.....	270
Suggestions for Guiding Game Activities.....	271
Suggestions for Teaching Rhythms.....	273
Suggestions for Story Plays.....	273
Bibliography for Teachers.....	274
Science and Health in the Elementary School	275
Why Science and Health Should Be Taught.....	275
How Science and Health Might Function in Other Activities.....	275

	Page
Suggested Science and Health Program by Grades.....	276
Grade One.....	278
Problem I. What Is Happening to Living Things in Autumn?	278
Problem II. How Does the Sky Change?.....	278
Problem III. How Can We Find Out About Air?.....	279
Problem IV. How Does the Weather Change?.....	280
Problem V. How Do We Keep Well?.....	280
Problem VI. What Is Happening to Living Things in Spring?	281
Problem VII. Why Are Rocks Interesting to Us?.....	282
Problem VIII. How Can We Make Things Move?.....	282
Grade Two.....	282
Problem I. How Are Living Things Able to Live Through Winter?.....	282
Problem II. How Does the Sun Affect Our Earth?.....	283
Problem III. Why Does It Rain and Snow?.....	284
Problem IV. How Do Magnets Work?.....	284
Problem V. How Can We Help Our Bodies Grow?.....	285
Problem VI. How Do Animals Care for Their Young?.....	285
Problem VII. How Do Living Things Grow?.....	285
Problem VIII. How Do We Use Plants and Other Animals?.....	286
Problem IX. What Makes Things Move?.....	286
Problem X. How Are Rocks Made?.....	287
Grade Three.....	287
Problem I. Why Do Animals and Plants Live Where They Do?.....	287
Problem II. How Are Animals Protected?.....	288
Problem III. What Do We See in the Sky at Night?.....	289
Problem IV. How Does the Surface of the Earth Change?.....	290
Problem V. How Is Work Made Easier?.....	290
Problem VI. How Can I Form Good Habits?.....	291
Problem VII. How Are Stones Useful?.....	292
Problem VIII. How Do We Get Food?.....	292
Grade Four.....	293
Problem I. How Are Things in the World Put Into Groups?	293
Problem II. How Do Living Things Live and Grow?.....	293
Problem III. How Do Some Living Things Live and Work Together?	294
Problem IV. How Do the Movements of the Earth Affect Conditions on the Earth?.....	295
Problem V. What Do We See in the Sky at Night?.....	296
Problem VI. How Do Our Bodies Work?.....	296
Problem VII. How Do Magnets Work?.....	298
Problem VIII. How Do Rocks Tell Us About the Plants and Animals of Long Ago?.....	298
Grade Five.....	299
Problem I. How Are Living Things Able to Survive Seasonable Changes?.....	299
Problem II. How Do Living Things Get Food?.....	300
Problem III. How Do Living Things Make Other Living Things Like Themselves?.....	302

	Page
Problem IV. Why Are There Changes in the Weather?.....	303
Problem V. How Does Electricity Help Us?.....	305
Problem VI. How Do Chemical Changes Affect Us?.....	306
Problem VII. How Does Heat Affect Materials?.....	307
Problem VIII. Why Must I Care for My Body?.....	308
Grade Six.....	310
Problem I. How Can We Help Conserve Our Natural Resources?	310
Problem II. How Can We Learn How Old the Earth Is?.....	310
Problem III. How Do the Many Heavenly Bodies Affect Each Other?.....	311
Problem IV. How Do We Use Lights?.....	312
Problem V. How Do Machines Make Work Easier?.....	313
Problem VI. How Is Sound Produced?.....	315
Problem VII. How Has Our Community Been Made a Better Place in Which to Live?.....	316
Grade Seven.....	317
Problem I. How Do Scientists Work?.....	317
Problem II. How Are Living Things Able to Live in Their Environment?	317
Problem III. How Is the Earth's Surface Being Changed?.....	319
Problem IV. How Do Heat and Cold Affect Solids, Liquids, and Gases?	320
Problem V. Why Is Air Important to Us?.....	321
Problem VI. How Does My Body Function?.....	322
Problem VII. How Do Living Things Depend on Each Other?	323
Grade Eight.....	324
Problem I. How Does Our Earth Fit into the Universe?.....	324
Problem II. How Has Colorado Changed Through the Ages?	325
Problem III. Why Does the Weather Change?.....	326
Problem IV. How Have We Used Natural Forces to Im- prove Our Ways of Living?.....	327
Problem V. How Should I Care for My Body?.....	328
Problem VI. Why Must We Conserve Our Natural Re- sources?	330
Problem VII. How Do We Care for the Plants and Animals We Use?.....	330
Problem VIII. How Do Living Things Reproduce?.....	331
Evaluating the Pupil's Work.....	332
Suggested Adaptations of This Program.....	334
Special Helps in Teaching Science.....	334
How to Make an Aquarium.....	334
How to Make a Terrarium.....	335
Caring for Caterpillars.....	336
Suggestions for Equipment.....	336
Planning Field Trips.....	337
Procedure for Doing an Experiment.....	337
Visual Aids.....	338
Suggestions for Working Out a Problem.....	338
How to Carry on a Problem Solving Lesson.....	341
Bibliography for the Teacher.....	341

	Page
Arithmetic in the Elementary School	343
Why Arithmetic Should Be Taught.....	343
How Arithmetic Might Function in Other Activities.....	345
A Suggested Arithmetic Program by Grades.....	346
Grades One and Two.....	346
Suggested Content, Grade One.....	347
Suggested Content, Grade Two.....	348
Suggested Procedures	350
Grade Three.....	365
Suggested Content	366
Suggested Procedures	373
Grades Four, Five, and Six.....	385
Suggested Content, Grade Four.....	386
Suggested Content, Grade Five.....	389
Suggested Content, Grade Six.....	390
Suggested Procedures	392
Grades Seven and Eight.....	414
Suggested Content, Grade Seven.....	416
Suggested Content, Grade Eight.....	417
Suggested Procedures	419
Evaluating the Pupil's Work.....	428
Suggested Adaptations of This Program.....	429
Special Helps In Teaching Arithmetic.....	432
Individual Differences.....	432
Diagnostic and Remedial Work.....	434
Maintaining Skills.....	434
Utilizing the Environment.....	435
Problem Solving.....	435
Bibliography for Teachers.....	437
Fine Arts in the Elementary School	438
The Program in Literature.....	439
Why Literature Should Be Taught.....	439
How Literature Might Function in Other Activities.....	439
A Suggested Program in Literature by Grades.....	440
Grade One.....	440
Suggested Outcomes	440
Suggested Procedures	440
Grades Two and Three.....	441
Suggested Outcomes, Grade Two.....	441
Suggested Outcomes, Grade Three.....	441
Suggested Procedures	441
Grades Four, Five, and Six.....	442
Suggested Outcomes, Grade Four.....	442
Suggested Outcomes, Grade Five.....	442
Suggested Outcomes, Grade Six.....	443
Suggested Procedures	443
Grades Seven and Eight.....	443
Suggested Outcomes, Grade Seven.....	443
Suggested Outcomes, Grade Eight.....	443

	Page
Suggested Procedures.....	444
Evaluating the Pupil's Work.....	444
Suggested Adaptations of This Program.....	444
Special Helps in Teaching Literature.....	444
Suggested Classroom Procedures.....	444
Oral Reading to the Class.....	445
Audience Oral Reading.....	445
Group Study of a Selection.....	446
Free Reading.....	446
Book Reviews.....	446
Recommending Books.....	448
Reading and Memorizing Poetry.....	448
Choral Reading.....	452
Singing Poetry.....	453
Dramatization.....	453
Selection of Books.....	453
Bibliography for Teachers.....	455
The Program in Art.....	456
Why Art Should Be Taught.....	456
How Art Might Function in Other Activities.....	457
A Suggested Art Program by Grades.....	458
Grades One and Two.....	458
Suggested Procedures and Outcomes.....	458
Suggested Things to Do in First Grade.....	460
Suggested Things to Do in Second Grade.....	463
Grade Three.....	465
Suggested Procedures and Outcomes.....	465
Suggested Things to Do in Third Grade.....	467
Grade Four.....	469
Suggested Procedures and Outcomes.....	469
Suggested Things to Do in Fourth Grade.....	472
Grade Five.....	475
Suggested Procedures and Outcomes.....	475
Suggested Things to Do in Fifth Grade.....	477
Grade Six.....	480
Suggested Procedures and Outcomes.....	480
Suggested Things to Do in Sixth Grade.....	481
Grade Seven.....	484
Suggested Procedures and Outcomes.....	484
Suggested Things to Do in Seventh Grade.....	485
Grade Eight.....	488
Suggested Procedures and Outcomes.....	488
Suggested Things to Do in Eighth Grade.....	489
Evaluating the Pupil's Work.....	490
Suggested Adaptations of This Program.....	490
Bibliography for Teachers.....	491
The Program in Music.....	493
Why Music Should Be Taught.....	493
How Music Might Function in Other Activities.....	494
The Place of Music in Child Growth and Development.....	495

	Page
Suggested Music Program by Grades.....	499
Suggested Outcomes and Activities for Grade One.....	499
Suggested Outcomes and Activities for Grade Two.....	504
Suggested Outcomes and Activities for Grade Three.....	510
Suggested Outcomes and Activities for Grade Four.....	517
Suggested Outcomes and Activities for Grade Five.....	525
Suggested Outcomes and Activities for Grade Six.....	532
Suggested Outcomes and Activities for Grades Seven and Eight	538
Evaluating the Pupil's Work.....	544
Suggested Adaptations of This Program.....	545
Special Aids in Teaching Music.....	546
The Song Program.....	546
The Rhythm Program.....	565
The Music Listening Program.....	573
Making and Playing Musical Instruments.....	596
Music Reading.....	616
Bibliography for Teachers.....	662
Helps for the Teacher on Special Problems.....	663
Suggestions for Teaching Bi-Lingual Children.....	663
Teacher Made Tests and Practice Materials.....	670
Teacher-Pupil Planning of Units of Work.....	678
Simple Organization for an Elementary School Library.....	681
Suggestions for Classroom Organization.....	694
Emotional Balance of Children.....	697
The Daily Schedule.....	702
The National and State Flags and the State Song, Flower, and Bird.....	712

FOREWORD

The State Department of Education takes pleasure in presenting this revised Course of Study for Elementary Schools to the teachers of Colorado.

In the preparation of this publication the same basic principles are recognized as were generally accepted by the educational world when the 1936 course of study was issued. However, there are incorporated new patterns for practices and new techniques based upon further scientific findings which have appeared since the former course was published. Extremes in educational procedures have been purposely avoided and it has been the constant aim to make this course of study meaningful and practical.

It has been prepared to the end that teachers may have at hand an authoritative, stimulating, and reliable manual for daily use that suggests learning situations designed to develop in pupils the ability to live in a complex and democratic society.

The present world conflict brings to our attention the fact that the nations have not yet learned how to live together. Harmonious living among the peoples of the earth must be based on understandings. In the preparation of this issue, the committee and contributing lay citizens hold that education can be a vital force in producing those understandings which will tend to make it possible to avoid conflicts. As children in school, under the guidance of teachers with vision, develop understandings of social relationships, and as they practice the art of living with others in school and in the community, they may become better prepared to live in the social world of today and to take their place in the new world to be.

Therefore, aside from its usefulness and merit in providing a standard for a minimum program, the primary value of a state course of study is that it provides a statewide pattern for common experiences which are necessary for common understandings among the citizens of the commonwealth. It is not intended that this course of study shall supersede or take the place of a superior one already in use in any school, but, as already indicated, it shall provide a medium for common experiences which make for common understandings. In each community, however, this course may be enriched and broadened in accordance with the local economic and social life.

The curriculum is a moving thing and should be subject to constant revision and modification in the light of new knowledge and experience. I urge the teachers of Colorado to give thought and study to the matter of curriculum making and from time to time report the results of their findings to the State Department of Education so that the state as a whole may have the benefit of wisdom gained from experiences in the local schools.

Let us not forget that the school curriculum in itself is lifeless and without spirit until a teacher makes it a living thing.

INEZ JOHNSON LEWIS,
State Superintendent of Public Instruction.

ACKNOWLEDGMENTS

The State Department of Education gratefully acknowledges its indebtedness to the teachers of Colorado and to the many lay citizens who have directly and indirectly aided in making this course of study.

Particularly do we commend the services of the Directing Committee who gave untiringly of their services in producing this volume. The Committee consisted of Dr. Annie McCowen, Colorado State College of Education, Greeley, Chairman; Dr. Wilhelmina Hill, University of Denver, Denver; and Dr. John J. Dynes, Western State College of Colorado, Gunnison. These directors were assisted by state-wide committees in the various fields of education who deserve special commendation. We are grateful also to the presidents of the institutions of higher learning of Colorado who assisted in this endeavor by providing the services of many of their able faculty members.

It is also gratifying to the State Department that in this undertaking, we have had the interest of Colorado's administrators—city, town, and county superintendents of schools—throughout the state.

We commend the services of Mr. Dwight Hamilton, Director of Elementary Education and Curricula, of the State Department of Education, who guided the entire preparation of this issue.

The State Department of Education feels greatly indebted to all who have in any way contributed by word or deed to this enterprise. It is regretted that space will not permit the specific mention of all who have given of their time and energy to this publication.

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INTRODUCTION

The purpose of this publication is to improve instruction in the elementary schools of Colorado. It is intended to be used as a guide for teachers in planning the school experiences of boys and girls in Colorado's schools. It may serve as a pattern for a minimum program for developing those skills, abilities, understandings, attitudes, and appreciations deemed important and necessary for boys and girls who are ultimately to participate in our democracy. It remains for the teachers of Colorado to adapt this course to the needs of the communities in which they teach and to the children under their guidance.

It is the intent of this Department that the teachers supplement and enrich the learning experiences which are suggested. Children, according to the suggested procedure, should have a part in helping to plan, carry out, and to evaluate their experiences in making this course a vital source for educational guidance.

It is recommended, therefore, that teachers individually and in groups, whenever possible, study this course of study and plan for its most effective use.

OBJECTIVES OF ELEMENTARY EDUCATION

The Directing Committee and members of the various state committees have been guided by the generally accepted objectives of elementary education, namely: *That the elementary school exists for the purpose of guiding the development of the whole child—physically, mentally, socially, and emotionally.* To achieve these objectives, the elementary school should:

1. Provide opportunities for the growth and development of strong, healthy bodies.
2. Guide the child's development in such ways as to promote an ever increasing degree of emotional stability.
3. Provide opportunities for developing an understanding of and an appreciation for democracy as a way of living.
4. Provide opportunities for the development of intelligent understanding of the natural and social environment.
5. Provide opportunities for growth in the ability to live happily in a cooperative society.
6. Provide opportunities for growth in understanding and to-

ward mastery of those skills and abilities used frequently in life situations and those for which the need is crucial when it does arise.

7. Provide opportunities for the development of individual interest and aptitudes.

DIVISIONS OF THE COURSE OF STUDY

The Course of Study is divided into the following sections:

1. Language Arts (Reading, Composition, Spelling, and Handwriting)
2. Social Studies (A fusion of geography, history, and civics)
3. Physical Education
4. Science and Health
5. Arithmetic
6. Fine Arts (Literature, Art, and Music)
7. Helps for the Teacher on Special Problems (Suggestions for Teaching Bi-lingual Children, Teacher Made Tests, Unit Teaching, Library Organization, Classroom Organization, Guiding the Emotional Development of Children, The Daily Schedule, Information on the National and State Flags and the State Song, Flower, and Bird)

Although the content of the Course is divided into these six major sections, it does not imply that each is to be taught in complete isolation from the others. Each area has a definite contribution to make to the development of the child, but all are interrelated. Reading functions in all areas; arithmetic may be needed in many activities; oral expression is continually used; art may grow out of social studies; music has a prominent place in the physical education program; etc.

On the other hand, forced correlation is to be avoided. There is no reason why the entire curriculum should be centered around any one area. The daily living of adults is not organized in that way. A good principle to follow, as a guide in this matter of correlation, is: *In any educational activity, utilize those related experiences which fit naturally into the activity and which serve a useful purpose in furthering the objectives of the activity.*

Each of the first six divisions of the Course is developed on a similar pattern. The main headings in the social studies section follow and are typical of the others.

1. Why Social Studies Should Be Taught (The contribution which social studies can make to the growth of the child)
2. How Social Studies Might Function in Other Activities (The relationship of social studies to the entire program)
3. The Program in Social Studies by Grades (Including suggested outcomes, illustrative units, suggested activities, and other aids for teaching)
4. Evaluating the Pupil's Work (Suggestions for evaluation in terms of desirable outcomes)
5. Suggested Adaptations of This Program for Schools Having Several Grades Taught by One Teacher
6. Special Helps in Teaching Social Studies (Suggested methods and procedures)
7. Professional Bibliography for Teachers (A selected list of books on teaching the social studies)

MATERIALS FOR INSTRUCTION

Instructional materials are extremely important in carrying out the best type of educational program. The Colorado State Library has prepared *A Supplement to the Course of Study for Elementary Schools* in which are listed texts in all fields and supplementary instructional materials. This bulletin may be secured by county superintendents by writing to the Colorado State Library, Room 320, Capitol Building, Denver, Colorado.

THE COLORADO SCHOOL LAW AND THE COURSE OF STUDY

The Colorado School Law requires four types of instruction to be given in the state. These are:

1. Instruction in the English language
2. Instruction in Colorado history and civil government
3. Instruction in the United States Constitution
4. Instruction in the effects of alcohol and narcotics.

These are provided for in this Course of Study.

LANGUAGE ARTS IN THE ELEMENTARY SCHOOL

The chief purpose of the program in the language arts is to enable pupils to develop skill in the communication of ideas. They must learn to read, to speak, and to write clearly, exactly and correctly in proportion to their needs and abilities at each grade level.

The language arts may be divided into two major parts, namely, reading and expression. The program in reading includes work-type or informational reading, and recreatory or leisure-time reading. In this course of study, only work-type reading will be considered under the division of the language arts. Recreatory reading will be treated as literature under the division of fine arts. Expression will be divided into composition, both oral and written, handwriting, and spelling. Grammar will be considered as a part of the program in composition.

Pupils in each grade differ widely from each other in achievement. Good teaching increases, rather than decreases, these differences. The programs in reading, composition, spelling, and handwriting are designed to meet the needs of pupils of average ability in a grade. It is to be expected that a few pupils in each grade will be unable to do all of the work suggested for that grade. Others should be able to do much more work than is necessary to meet the requirements stated.

THE PROGRAM IN READING

WHY READING SHOULD BE TAUGHT

There are three major objectives to be accomplished in teaching reading in the elementary school.

1. Pupils should be given rich and varied experience through reading widely.
2. Strong motives for reading and permanent interest in reading a wide variety of worthy material should be developed.
3. Pupils should be taught desirable attitudes toward reading and economical and effective reading habits and skills.

Instruction in both oral and silent reading is needed. Silent reading should be stressed, since that is the type of reading in which people most often engage.

A daily reading period of from twenty to forty minutes in each grade during which important reading skills are taught is recommended.

HOW READING MIGHT FUNCTION IN OTHER ACTIVITIES

As a tool for getting information, understanding directions, and interpreting problems, reading functions in every phase of the elementary school program. It is of the utmost importance that each reading skill, after it has been taught during the reading period, be used in connection with other school subjects as opportunities occur. For example, first grade pupils should be encouraged to use their knowledge of phonics to unlock new words which they meet in reading number stories. Fourth grade pupils might use the index to locate information on a problem in social studies. Sixth grade pupils could use their knowledge of making a summary in writing up an experiment in science.

A SUGGESTED READING PROGRAM BY GRADES

This program is for work-type reading in which the fundamental reading skills are developed. The recreatory or leisure reading program, is presented as the Program in Literature in the Division of Fine Arts in the Elementary School.

GRADE ONE

Suggested Outcomes for Pupils of Average Ability at the End of Grade One

1. A desire to learn to read
2. The realization that reading is a thought process
3. Habit of moving the eyes correctly across the line of reading on the board, on charts, and in books
4. A sight vocabulary of 400 to 450 words that occur frequently in pre-primers, primers, and first readers
5. Ability to recognize unfamiliar words independently by using the context as a clue, by recognizing similarity to other known words, and by the use of phonics
6. The knowledge that portions of words that look alike do not always sound alike and that the phonetic analysis of a word will not always give its pronunciation
7. Ability to read understandingly words, phrases, sentences, and simple paragraphs
8. Habits of reading without finger pointing, lip movement, or head movement
9. Ability to hold books correctly in oral and in silent reading
10. Ability to read aloud, with fluency, material suited to first grade
11. Ability to recognize the letters of the alphabet, written separately or in combination with other letters
12. A knowledge of how to use the table of contents in a reader
13. Ability to determine whether two ideas are or are not related
14. Ability to arrange simple ideas in proper sequence
15. Ability to tell or dramatize from memory the main points in a story read
16. Ability to answer questions, make drawings, etc., about material read

Suggested Procedures and Other Aids for Teaching

During first grade, pupils need guidance through two important stages of development in reading: (1) Reading Readiness (2) Initial Guidance in Actually Learning to Read.

The Development of Reading Readiness

The first six to eight weeks should be devoted to getting pupils ready to begin reading, that is, to developing reading readiness. Some pupils cover the period in much less time; some need longer.

Where kindergartens exist, this readiness period is usually adequately taken care of by the kindergarten teacher. Where this is true, the first grade teacher goes at once into the stage called in this course of study "Initial Guidance in Actually Learning to Read." Of course it is important for him to continue the readiness program parallel with actually teaching the child to read.

The work during this period of introduction to reading should be very informal. Since there can be no reading without meanings, the work should consist primarily of providing the pupils with real, varied, and rich experiences necessary to acquaint them with the words which they will use later in reading. The following activities carried on in connection with other school subjects should prove helpful in doing this:

1. Construction work such as making a playhouse and the furniture for it; making a cage or pen for pets; making a toy store or movie; making simple toys of wood, cardboard, or clay.
2. Excursions to places of interest such as going to visit a building under construction; a trip to a vegetable cellar, a dairy, a truck farm, a stock farm; special trips to see birds, flowers, etc.
3. Social affairs such as playing or reading a story for other pupils; giving a party; entertaining parents at school; helping a pupil celebrate his birthday.
4. Other practical projects such as making apple sauce; making butter from cream; collecting frogs' or mosquitoes' eggs and watching the young develop; taking care of pets or flowers in the school room.
5. Reading activities such as reading stories and poems to the pupils; showing picture books to the pupils and permitting them to use them freely; helping pupils construct a scrapbook in which suitable titles, descriptions, etc., will be written by the teacher or older pupils and read to the pupils; providing for much incidental reading

through the use of bulletin boards, posters, blackboards, labels on objects around the room, writing name of pupil on cards to be placed on that pupil's desk or his coat room hook, etc.

6. Language activities such as encouraging pupils to tell the class about interesting experiences they have had such as vacation trips, any unusual home activities, new pets, toys, clothes, etc.; having pupils tell stories to the class; after a story has been read or told to pupils, having them retell the main events in the story in the order in which they occurred; planning projects together; after a project has been completed, having pupils dictate to the teacher the steps taken by the group in working out the project while the teacher makes a record of what is said and later reads it to them, keeping it for future use; giving directions for playing games.
7. Problem solving activities in which pupils learn to deal with ideas and meanings through discussing a problem such as "What happens to seeds after you plant them?"
8. Ear training in noting likenesses and differences in words such as listening to a short poem or rhyme and discussing what words sound alike. This can be followed by having pupils name all of the words that they think of that sound like *ball*, etc.
9. Visual training in noting likenesses and differences in the appearance of words such as picking out from among several words on a poster or chart those that are alike, that start alike, or that end alike. This actually does not involve any real reading, since children are encouraged to point out the likenesses and differences without attempting to call the words. This could be followed by exercises in which children note how one word is different from a group of otherwise identical words. Again it is not necessary to actually pronounce the words.
10. Use of commercial materials such as picture books or work books for pupils that now form the beginning unit in most series of basal readers. These books are designed especially to develop readiness for reading. Teachers will find them very helpful. It is advisable to use the

readiness book that is a part of the basal reading series—pre-primer, primer, and first reader—that the teacher intends to use first with her pupils.

It is a very difficult task to determine when a pupil is really ready to begin reading. Tests are available which will help the teacher determine when a given pupil is ready to begin reading. Some of the best known reading readiness tests are:

Betts Ready to Read Tests. Meadville, Pennsylvania: Keystone View Company. (Suitable only for testing visual readiness.)

Durrell-Sullivan Reading Readiness Test. Yonkers-on-Hudson, New York: World Book Company. (Group test.)

Gates Reading Readiness Test. New York: Bureau of Publications, Teachers College, Columbia University. (Group and individual test.)

Metropolitan Readiness Tests. Yonkers-on-Hudson, New York: World Book Company. (Group test.)

Monroe Reading Aptitude Tests. Boston: Houghton Mifflin Company. (Group test in which a portion is given individually.)

Van Wagenen Reading Readiness Test. Minneapolis, Minnesota: Educational Test Bureau, Inc. (Individual test.)

Results of reading readiness tests and intelligence tests should never be the sole basis for making a decision on this important point. The teacher's judgment will have to be used as well. The teacher's manual to the basal reading series, if a good one, is an invaluable guide in helping teachers decide when pupils are really ready to undertake reading. The generally accepted mental age is six years and four months to six years and six months for success in undertaking the usual reading program of the first grade.

Mr. Dwight Hamilton has prepared for the State Department of Education a curriculum bulletin, *Adapting the Reading Program to the Needs of the Individual Child*, in which the whole problem of reading readiness is treated much more fully than is possible in this course. Teachers are urged to secure this free bulletin from their county superintendent and read carefully pages 39-56.

Initial Guidance in Actually Learning to Read

The Use of Basal Readers

One desirable approach to the first actual reading lessons is through the use of a good pre-primer. Since the authors of a pre-primer in a series of readers know more about the effective way of presenting each reading skill to be developed through the use of that series than any one else, the first grade teacher is urged to follow carefully the suggestions given in the teacher's manual of the particular series of readers that she is using.

Because of the inability to control the reading vocabulary, it seems wise to have pupils advance from pre-primer to primer and to first reader in the same series rather than have them read two or three different pre-primers from several different series before attempting a primer. Thus when a child has finished the pre-primer in one series, it is recommended that he continue his reading in the primer and later in the first reader in that same series. In that way, the child is able to maintain constantly the first reading vocabulary that he learned, and to add new words to it systematically. If a pupil can handle two books, then the teacher is urged to let him begin a second pre-primer in another series, follow it in turn by a primer and a first reader in that same series, thus reading two parallel series of pre-primers, primers, and first readers. Care should be taken to see that each time he completes a pre-primer, he reads the primer and first reader that follow it in that series. Thus, by reading first the pre-primer, then the primer, and finally the first reader in each of several different series of readers, each pupil should build up an excellent sight vocabulary of from 400 to 450 words that will occur with high frequency in all his subsequent reading.

Another workable plan for using supplementary readers is to have children read additional pre-primers as they complete the primer of the basal series and read additional primers as they complete the basal first reader. Additional first readers may be used, if time permits, near the end of the year and also for supplementary work during the early part of the second year.

Several basal series have supplementary reading materials in the form of parallel books or pamphlets on each reading level, built on the vocabulary contained in the basal books. When such materials are available it is advisable to have the pupils read them, after having read the basal book at each level, before reading books from another series.

Although most teachers should by all means follow carefully the manual accompanying each series of readers used, the following suggested steps in teaching lessons in the basic reader may be helpful:

1. Create an interest in the new material to be read by:
 - a. Connecting some incident in the story with the child's life.
 - b. Talking about the pictures.
 - c. Presenting a picture outside the book that relates to the story.
 - d. Raising some interesting questions that may be answered in the story.
 - e. Proposing an activity based on the story: a booklet to be made; a game to play.
2. State clearly the motive for reading by asking pupils:
 - a. To answer one or more questions set up.
 - b. To verify opinion derived from observing the pictures.
 - c. To get the story if the material used is not factual in nature.
3. If the new words and phrases have been presented in a previous period, the next step below follows. If not, present new words and phrases before the story is read. Such words as *in*, *the*, *this*, *can*, *do*, which do not bring a mental image, should always be drilled on in context.
4. Show pupils how to use markers, strips of plain unglazed paper or tag board. Most pre-primers begin with one line of text to the page so markers are not needed until pupils attempt to read material of two or more consecutive lines on a page. These markers help pupils to identify the whole thought unit and keep the place. They should be discarded by each pupil as soon as he can read easily and keep the place without them.
5. Have pupils read the story by thought units. For example, pupils find and read a part of the story that tells about some incident named by the teacher.
6. Have the pupils read the story orally.
7. Have pupils read parts of the story silently, beginning with a sentence and gradually increasing the amount read until paragraphs and entire stories are read silently.

8. Check up to see whether motives were accomplished. The following types of procedures are suggestive:
 - a. Dramatization.
 - b. Rereading the story for another group.
 - c. Experimenting as a result of some ideas derived from the story, such as planting bulbs, keeping a bird chart, buying gold fish.
 - d. Oral reading if most of the lesson has been silent reading.
 - e. Some type of test, seat work, or informal drill relating to reading.

Informal Reading Activities

In addition to the lessons in the basic readers, teachers will find informal reading activities carried on in connection with other school work invaluable as a means of motivating reading and providing additional practice in reading.

Reading Activities in Connection with Social Studies

These informal activities may be correlated with the social studies and so center about the study of the home. In writing up these activities several children contribute in turn one or more sentences, each of which the teacher writes on the board or chart. Great skill on the part of the teacher is needed to control the vocabulary of these group compositions. She must know some of the basic words needed in the pre-primer and direct the children's contributions accordingly. Example:

How We Work at Home

Mother cooks and washes.

Daddy works on the farm.

Brother milks the cows.

Sister dusts and washes dishes.

I hunt the eggs.

Children then read the entire group composition from memory and sight. Help is given by asking questions that make the reading meaningful rather than word calling as, "What did we say Daddy did?"

The children locate different phrases and words. Pupils may illustrate one or more ideas told in the composition.

The group composition may be transferred from the blackboard to oaktag paper or large white wrapping paper with se-

lected pictures at the top. It may be further utilized by hectographing individual copies for each pupil. Each pupil may then build up his own book as these group compositions are created.

Reading Activities in Connection with Other Aspects of the School Program

Activities carried on in connection with all aspects of the school program constitute a splendid source of ideas for the content of blackboard and chart compositions for reading. Example:

How We Made Butter

We put cream in a jar.
We shook the jar with the cream in it.
It took a long time.
Butter came after we shook the jar.
We put salt in the butter.

Reading Activities Growing Out of Current Happenings

Informal lessons in reading may be based on news items, announcements, weather records, plans for activities, etc. Example:

Today is Jane's birthday. She is six.
Her mother gave her a doll. It can cry.
The doll has red hair and blue eyes.
It can go to sleep. It can walk.

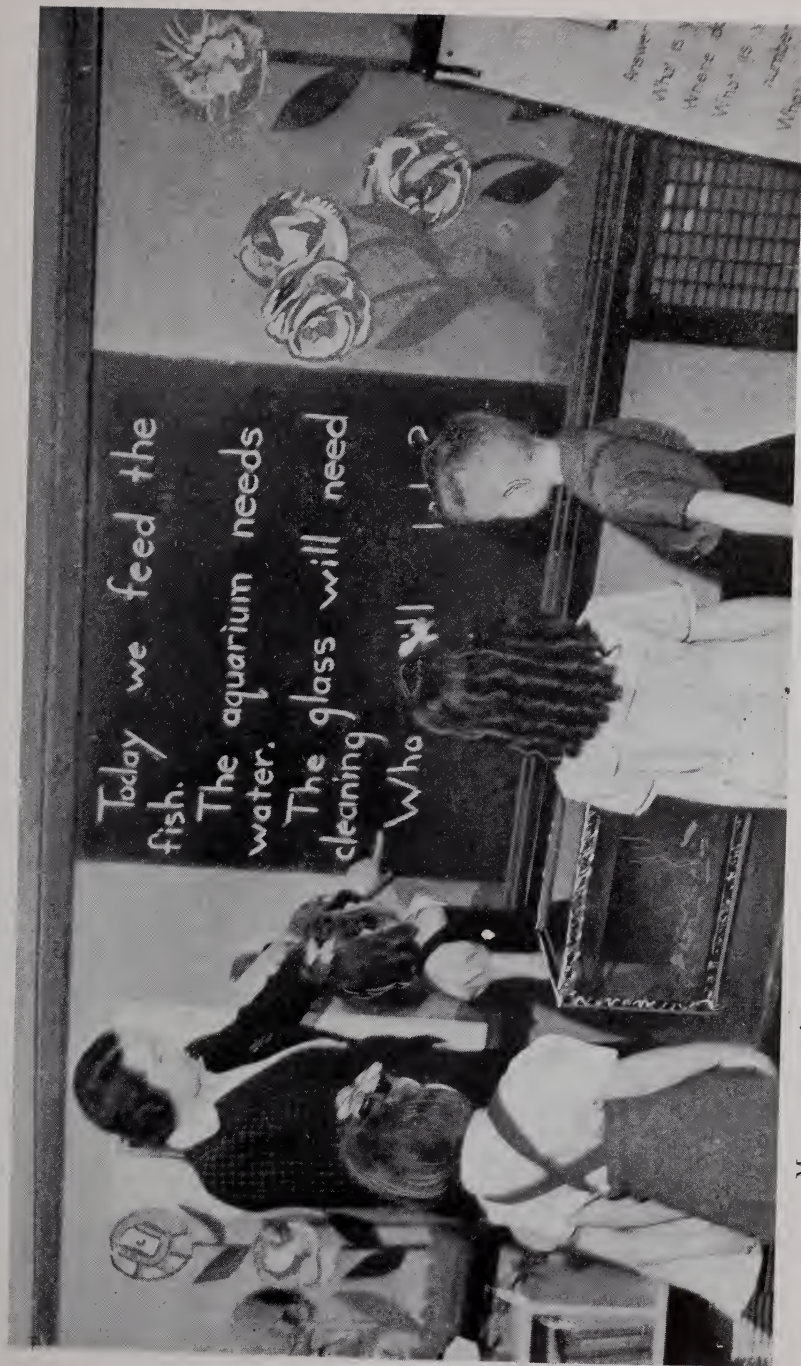
Reading Activities in Connection with Learning to Play Games

Many informal reading lessons may be based upon directions for action games. In this type of lesson the teacher should say each new word that enters into an instruction before writing it. Examples:

Skip around the room.
Draw a house.
Color it red.
Bring me an eraser, please.

Teacher-made Reading Exercises

Teacher-made reading exercises are valuable in testing the pupil's ability to comprehend what he reads silently. For example: Have pupils build stories from mixed-up sentences of a rhyme or story such as:



Many areas of school living form the background for experience chart reading activities

Jack be quick. Jack jumped over the candlestick. Jack be nimble.

Classifying words according to their meaning such as having pupils write these words in the right box below.

dog	Robert	radio	horse
electric light	John	wagon	log-house
candles	Mary	auto	flat-iron

Words that belong in the story	Jokers or words that don't belong in the story

Group compositions for informal reading activities should have content of real interest to the pupils. They should be graded in difficulty; that is, the first one should be simple and made up of two or three lines. Later, they may be longer and with a slightly more difficult vocabulary. The vocabulary should contribute to the work being done in the basic pre-primer, primer, or first reader. There should be a central idea in each composition. Where interest can be maintained, there should be a repetition of words and phrases. Phrases and words should not be divided at the end of the line. Runover lines should be set to the left of the beginning of the sentence as is done in all paragraph writing. Manuscript writing should be used on the blackboard. Either manuscript or stamp writing should be used on charts. Each group composition should have a name or title. Illustrations add interest. Through the use of informal reading activities, pupils not only get much additional practice on the vocabulary developed in the basal readers, but they also build up an acquaintance with several hundred content words, words upon which little or no drill may be necessary.

Developing Independence in Word Recognition

By Using Contextual Clues

Pupils might well be shown that the first thing to do when they come to a strange word in reading is to skip that word and try to find out what it is by reading silently the rest of the sentence. If they are successful, they should then reread the whole sentence to be sure that they understand it.

By Using Pictures

Pupils should be shown how pictures in their readers and other books can be used to help them understand what they read. For example, if in reading *Bob's coat is brown*, a pupil is unable to recognize the word *brown*, the teacher might ask, "What does the picture tell about the color of Bob's coat?" Much practice needs to be given in reading pictures and in discussing what they add to each story.

By Recognizing Similarities to Other Known Words

The following types of word analysis exercises should aid pupils in developing independence in word recognition through discovering ways in which strange words are similar to known words:

1. Finding likenesses and differences in configuration of words such as *took, book, look, cook; gray, grass, great, green, ground; tell, till, tall*.
2. Finding parts of words that look alike and sound alike such as *far, farm, farmer; better, butter, matter; all, fall, ball, call, tall, wall; playing, singing, standing, morning, har- ing; star, start, stars, started*.
3. Finding one or more small words in longer words as *another, getting, because, bigger, yesterday, garden*.

By the Use of Phonics

A special bulletin entitled *Teaching Phonics in Grades One to Four* has been prepared by Mrs. Helen Gumlick for the State Department of Education. Teachers may receive copies free by writing to their county superintendent.

Special Suggestions for Teaching Oral Reading

1. About equal time should be devoted to oral and silent reading.
2. Pupils should always have a purpose for reading aloud. The teacher should use some means of creating an audience situation.
3. All vocabulary difficulties should be taken care of by giving pupils help promptly when they need it.
4. Easy material should be used for all oral reading lessons.

5. Teach pupils to read by meaning units rather than by words. Help them form the habit of keeping the eyes ahead of the voice in reading aloud.

GRADES TWO AND THREE

This is a period of rapid growth in fundamental attitudes, habits, and skills in reading on which effective silent and oral reading depends.

Suggested Outcomes for Pupils of Average Ability by the End of Grade Two

1. Further development of all skills begun in the first grade
2. Ability to read silently material suitable for second grade at the rate of about 100 to 120 words per minute
3. Well-established habits of reading independently easy books, charts, notices, etc.
4. A knowledge of the relative position of the different letters of the alphabet
5. Skill in use of the table of contents in books
6. Ability to read aloud second grade material with clear enunciation, correct pronunciation, pleasing voice, and proper phrasing
7. Habit of doing voluntary reading of books from the library, the reading table, and home

Suggested Outcomes for Pupils of Average Ability by the End of Grade Three

1. Further development of all skills begun in first and second grades
2. Ability to read silently third grade material at the rate of about 120 to 140 words per minute
3. Skill in alphabetizing words and in locating simple facts from easy material alphabetically arranged, such as names in a list, or topics in a short index
4. The knowledge that a word or group of words may have more than one meaning and that its particular meaning in a given setting depends upon the context (A reader must, therefore, be on his guard to get the meaning intended.)

5. The knowledge that the meaning of a sentence often depends upon sentences that come before and after it, and that a reader must often use those sentences to get the meaning intended
6. A knowledge of the purpose, use, and location of the index (Many supplementary books for third grade have no indexes. In schools where such books are used, all work in the index should be postponed until grade four.)
7. Ability to use obvious key words in locating material through the use of the index
8. Ability to determine the main topic of a sentence and of a short paragraph
9. Ability to read a simple outline consisting of main headings and subheadings
10. Ability to select the main topics in an easy selection of more than one paragraph
11. Ability to write a series of main topics in an outline, numbering and punctuating the series correctly
12. Ability to reproduce orally and in writing the main ideas in a simple factual paragraph
13. Ability to draw a conclusion to a problem from information given in several paragraphs

Suggested Procedures and Other Aids for Teaching

The Use of Basal Readers

Regular daily lessons from twenty to forty minutes in length in the basal readers and in similar supplementary books should be given. Teachers are urged to select with care basal readers which provide for the direct teaching of as many reading skills essential to growth at this level as possible. While most teachers should follow closely the manuals which accompany the basal readers, the following suggestions for using basal readers may be helpful:

1. Before starting to read a given lesson, time should be spent to establish points of contact with the pupils through the use of pictures, by recalling past experiences, and by questions or informal discussion of the probable content of the story.
2. Great care should be taken by the teacher to develop from the pupils definite problems and purposes to guide their reading.

3. In most lessons it is advisable to have each pupil read each selection silently at his own rate. During this reading the teacher should observe individual members of the class and note special difficulties.
4. Oral reading must not be neglected. Approximately one-third of the class reading time might well be devoted to continued practice in oral reading. Suggested types of oral reading lessons will be found on page 36.
5. Following the reading of a selection, usually some type of check-up on the reading skills taught or practiced in that selection should be made. (See pages 33-34.)
6. The work books which accompany most basal readers have excellent practice exercises for further developing the reading skills taught to the reader. Teachers are urged to have pupils use them whenever possible.

Reading Skills Needed in Study

As soon as pupils show signs of independence in reading, the work of the content subjects such as social studies, science, and health, should be so organized as to require them to read widely. At the third grade level they should be shown that most study lessons are also reading lessons. Simple study skills should be taught directly and practiced as the need for them arises in connection with other classroom activities.

In preparation for using the index, practice exercises in alphabetizing such as the following are necessary:

To the pupil:

1. Write the letters of the alphabet in the correct order.
2. Copy the names of fruits in this list, putting them in alphabetical order.

apples	grapes	cherries	strawberries	plums
oranges	pears	bananas	figs	

Third grade pupils should be guided to use obvious key words in locating in the indexes of books information on simple problems. Such simple exercises as the following may be used in third grade:

To the pupil: In the blank after each plant in the list below, copy from the index in your geography the pages on which you would look to find information about that plant.

If your geography has no information about a plant, write the word *No* in the blank beside it.

wheat.....	dates.....	potatoes.....	coconuts.....
rice.....	figs.....	onions.....	bananas.....

Pupils should use the table of contents to locate chapters to be read and to determine whether a given book has in it information bearing on a problem.

Practice should be given in finding and wording the main topics of sentences and short paragraphs.

Simple outlines should be constructed in planning the work of the content subjects. Pupils should be given practice in reading such outlines and in constructing the main topics of such outlines.

The best of the work books accompanying basal readers contain excellent practice exercises for developing and testing the reading skills needed in study. Their use is recommended.

Increasing the Reading Vocabulary

Vocabulary exercises to develop sight words needed in reading should be continued. Practice in discovering the pronunciation and meaning of new words through the use of contextual clues, the recognition of similarities to known words, and the application of phonics, should be continued. Exercises in finding synonyms and antonyms and in using words in sentences will be helpful in developing meanings of new words.

The best work books also contain practice exercises for developing skills in increasing vocabulary by all of these means.

GRADES FOUR, FIVE, AND SIX

This should be a period of wide reading which emphasizes thought-getting and the reading skills used in study. Permanent interest in a variety of types of reading materials for information as well as for pleasure should be developed.

Suggested Outcomes for Pupils of Average Ability by the End of Grade Four

1. Increased ability in all the skills stressed in grades one, two, and three

2. Ability to read silently fourth grade material at a rate of from 140 to 160 words per minute
3. Ability to read maps of water and land areas, maps of cities, and simple road maps
4. Ability to read simple line graphs
5. A knowledge of how to choose a selection to read aloud in the light of a situation or an occasion
6. Skill in oral reading
7. Ability to read parts of newspapers, magazines, and bulletins
8. A knowledge of the effect on meaning of the punctuation marks, the comma in a series, and the comma after an introductory *yes* or *no* just before a verb
9. Understanding of what a good paragraph is, and that many paragraphs are not good
10. Ability to outline single paragraphs including main headings
11. A knowledge of the purpose and value of outlining
12. Ability to select from among reading material words, sentences, and paragraphs which are relevant to a given problem
13. Skill in skimming for specific information
14. Ability to use, in solving problems, ideas gained through reading a number of different books
15. Ability to select the aim or purpose of a passage
16. Skills in choosing the key word in a problem so that material bearing on it may be located quickly
17. Knowledge of the meaning of punctuation marks and signs used in indexes
18. Skill in using simple cross references
19. Ability to locate words in the dictionary and to find out their meanings
20. Ability to use glossaries
21. Ability to use chapter headings
22. Ability to use the library card file with a fair degree of independence in locating books by using authors and subject cards
23. A knowledge of when it is important to remember material read

24. A knowledge of how to select the ideas that are important to be remembered
25. A knowledge of what to do to remember the important ideas read
26. A knowledge of how to determine the recency of printed information
27. Ability to recognize the difference between a statement of fact and a statement of opinion

**Suggested Outcomes for Pupils of Average Ability
by the End of Grade Five**

1. Additional learning at higher difficulty levels of all the skills and knowledges listed for preceding grades
2. A silent reading rate of from 160 to 200 words per minute
3. Ability to read bar graphs
4. Ability to read a table of figures
5. Understanding of the effect on meaning of the comma of address just before a verb
6. Ability to get the pronunciation of a word by using a dictionary
7. Ability to find subheadings in a paragraph
8. Ability to check an outline
9. Ability to make a summary sentence of a paragraph
10. Independence in the use of supplementary books used in connection with the content subjects

**Suggested Outcomes for Pupils of Average Ability
by the End of Grade Six**

1. Additional learning at higher difficulty levels of all the reading knowledges and skills developed during the first five grades
2. Approximate maturity in the fundamental reading skills, such as rate, accuracy in word recognition, correct eye movements, etc.
3. A silent reading rate of from 180 to 220 words per minute
4. An understanding of how to read pictorial graphs
5. A knowledge of the parts of a sentence, subject and predicate, and of the part that each plays in a sentence

6. An understanding of how the parts of a sentence may be placed in different positions (For example, the subject may be placed first, or last, or between parts of the predicate without altering the meaning of a sentence.)
7. The knowledge that each pronoun such as *he, she, it, him, her, they, them, these, those* stands for something definite and the ability to use the context to determine the noun for which each pronoun stands
8. An understanding of the effect on meaning of the comma in apposition and the comma with a parenthetical expression
9. Ability to take simple notes on material read by listing in statement form the important points which answer a given problem or question
10. Ability to select and arrange the subtopics under subheadings in an outline
11. How to write a brief summary paragraph of a short selection read
12. A fair degree of independence in the use of children's encyclopedias and simple statistical abstracts, etc.
13. Some knowledge of how to determine an author's probable information concerning his subject
14. A knowledge of how to cross-check a book with itself and with statements written by other authors

Suggested Procedures and Other Teaching Aids

The Use of Basal Readers

Although material from textbooks in other subjects and reference books can be used for making reading exercises, the busy teacher will find a good basal reader of the work type essential. Teachers are urged to select for use one or more basal readers that contain direct instruction in as many of the reading skills suggested for grades four, five, and six as possible. A daily reading period of about thirty minutes in length is recommended.

A good work book which contains practice exercises developing many or all of the reading skills needed in study is strongly recommended to be used in addition to the basal reader.

Reading in Connection with Content Subjects to Develop Study Skills

The development of specific reading skills needed in studying the content subjects constitutes a large part of the reading program for the intermediate grades. In addition to the instruction and practice provided in the basal readers and in the work book, pupils should use appropriate study skills in preparing their assignments in social studies, science, and all other content subjects as opportunities arise. The reading skills necessary to enable pupils to comprehend what they read—to dig out the meaning of a hard paragraph—are basic to successful study in all fields. Other specific reading skills needed in study can be grouped into the skills necessary for locating, selecting, evaluating, organizing, and remembering material.

Understanding What One Reads

Reading abilities necessary to comprehend, understand, and interpret correctly what is read may be taught by:

1. Constantly checking, by means of informal teacher-made tests, the pupil's understanding of the material he reads
2. Asking questions which force pupils to concentrate on the meaning of words, phrases, sentences, and paragraphs
3. Asking questions that cannot be answered unless a whole unit of reading material is understood
4. Seeing that pupils have a real problem in mind when reading for information, and checking after the reading by a discussion of that problem
5. Having pupils not skip, but read carefully, graphs, tables, and maps and discussing the pertinent information contained in them
6. Showing pupils how to use information gained from the study of the parts of sentences, certain parts of speech, and punctuation marks in language to clarify the meaning of difficult sentences and paragraphs in reading
7. Providing work in using contextual clues, pictures, and the dictionary to discover the meaning of strange words
8. Discussing with the pupils the fact that a word or a group of words may have more than one meaning (Practice exercises in deciding what is meant by a given word or a group of words as used in each of several different sen-

tences should be provided. The following lesson is illustrative of one type of exercise which can be used to do this:¹)

To the pupil: (Grade Four) A word or a group of words may have more than one meaning. Think what the word *good* means in each sentence below:

1. *Huckleberry Finn* is a *good* book.
2. Huckleberry Finn and Tom Sawyer were *good* friends.
3. Huckleberry's father was not *good* to him.

You could use the following sentences to show what is meant by the word *good* in each sentence above:

1. *Huckleberry Finn* is an *interesting* book.
2. Huckleberry Finn and Tom Sawyer were *loyal* friends.
3. Huckleberry's father was not *kind* to him.

Often when you read you will need to think carefully of what is meant by a given word or group of words. If you do not do that, you may not understand what is meant by the sentence in which the word is used.

On a clean sheet of paper write seven sentences to show what is meant by the group of words *get up* in the sentences given below. The words and groups of words that follow the sentences may help you.

1. "*Get up!*" cried Tom to the old horse as he picked up the reins.
2. "What time shall we *get up* tomorrow morning?" asked Huckleberry.
3. "*Get up* and fight!" cried Tom. "Come on. *Get up!*"
4. You should have seen the *get up* that Tom had on.
5. It took Huckleberry only three seconds to *get up* the ladder.
6. Can Tom *get up* a scheme for painting the fence?
7. We are going to *get up* a program about Tom Sawyer and Huckleberry Finn.

invent	arrange	get out of bed and dress
costume	stand up	put up
give	climb	move along
		use

¹Prepared by Dr. Paul McKee, Professor of Elementary Education, Colorado State College of Education, Greeley, Colorado.

When you have finished writing your sentences, read one or more of your sentences aloud, if you are asked to do so. Listen carefully while others read their sentences. Think whether their ideas of what *get up* means in the sentences are the same as yours. Help your class decide exactly what is meant by *get up* in each of the seven sentences. Then discuss these questions with your classmates and teacher:

1. Why do you need to know more than one meaning of each of some words?
2. When you read, why will you sometimes need to think carefully of the exact meaning of a word or group of words?

Locating Information One Needs

Reading abilities necessary to locate material may be developed by giving pupils instruction and practice in the use of the table of contents, alphabetizing, the index, cross references, skimming, the dictionary, glossaries, children's encyclopedias, and simple statistical abstracts such as the World Almanac. The following types of practice exercises are illustrative of a few of the many that might be used.

Alphabetizing

To the pupil: (Grade Four) Write the correct letter of the alphabet in the blanks of the following statements:

The letter *m* comes after the letter.....and before the letter.....

The letter *t* comes after the letter.....and before the letter.....

The letter *e* comes after the letter.....and before the letter.....

The letter *d* comes after the letter.....and before the letter.....

The letter *w* comes after the letter.....and before the letter.....

The letter *g* comes after the letter.....and before the letter.....

To the pupil: (Grade Five) Arrange the words in the following list in alphabetical order as you copy it on a clean sheet of paper.

coat coach coal coast coarse coachman coal-tar

Using the Index

To the pupil: (Grade Four) In each of the following questions, draw a line under the word or words which you would use as a key word in locating information on that question in the index of your geography.

Of what is chocolate made?	Where is the Boulder dam?
How is rice grown?	What does a beaver look like?
Where are there deserts in our country?	How is a reaper used?

To the pupil: (Grade Five) In each of the following questions, the word printed in italics should be used as a key word in locating information in an index about that question. If you couldn't find all of the information that you wanted by using that word, what other word in the question would be a good one to use as a key word? Draw a line under it.

Why is *linen* thread stronger than cotton?

In what part of Brazil are *rubber* trees grown?

Are *frost* and dew formed alike?

Are *bollweevils* the only insects that destroy cotton?

Are *frogs* and toads alike?

Are *cereals* ever made from rye?

Using the Dictionary

To the pupil: (Grade Six) What do the words in italics in these sentences mean? Look them up in a dictionary. On a clean sheet of paper rewrite each sentence. In the place of the words in italics use other words or groups of words that mean the same thing but that are easier to understand.

A camel is by no means a *docile* beast.

Once there was a *crone* who had seven hungry *bairns*.

The giant had such a *grim countenance* that he *terrified* the neighborhood.

Instantly the great black bear was *transformed* into a handsome man.

The six little *kids* *concealed* themselves from the cruel wolf.

The bird had such a beautiful *gait* that the crow tried to *imitate* it.

Selecting Material Pertinent to a Problem

The ability to select from a mass of reading material that material which is pertinent to a given problem may be developed by providing exercises in which pupils:

1. Select from among several words one word that is most closely related to a given word or group of words, for example (Grade Five), hurricane: blizzard, tempest, earthquake, volcano, trade winds.

2. Select from a large group of words or phrases those which pertain to a given topic such as the farm, the city, transportation, etc.
3. Select from among several sentences those that best answer a certain problem.
4. Select from a list of several books, those most likely to contain information on a given topic or problem.
5. Cross out in a paragraph or a series of paragraphs, sentences which do not bear on the topic of the paragraph.
6. Read several books and select from them information which helps answer a problem which the class has set up in connection with their study in social studies, science, etc.

Organizing Material Read

Ability to organize material may be developed by:

1. Having pupils, under the guidance of the teacher, set up problems for study in connection with the content subjects, using these problems as centers for the organization of the information gained and for discussion during the recitation period
2. Having pupils select the topic sentence or sentences in a paragraph
3. Giving pupils practice in deciding upon the main topic which a paragraph tells about, for example:

To the pupil: (Grade Four) Below is a paragraph and under it are listed four topics. One of the four is the main topic which the paragraph tells about. After you have read the paragraph, copy on a sheet of paper the topic which you think is the main topic of the whole paragraph.

It is very important to get rid of mosquitoes. Mosquito eggs are laid in ponds or puddles of water. The eggs hatch into tiny wigglers. To get rid of mosquitoes one must destroy these wigglers before they grow into mosquitoes. To do this some people put minnows into ponds. The minnows eat the young wigglers before they become grown mosquitoes. If coal oil is poured on top of the water, it will form a thin coating over the water and shut off the air the young need to breathe after they hatch. The best way to get rid of mosquitoes is to take away all water from places where mosquitoes could lay their eggs.

How minnows eat mosquitoes. Why every one should kill mosquitoes.
How to get rid of mosquitoes. The uses of coal oil.

4. Teaching pupils how to make a simple outline of a paragraph such as the one on how to get rid of mosquitoes given in the preceding example. One correct form to use in outlining is included in the program in composition on page 63. Care should be taken to select a well-organized paragraph that is easy for the pupils to read.
5. Having pupils prepare short oral and written summaries of class discussions, paragraphs read, and on the sixth grade level of whole units worked out in connection with the content subjects.

Evaluating Material Read

Ability to evaluate material may be developed by:

1. Having pupils distinguish between statements of opinion and statements of fact. The following lesson is illustrative of practical exercises to develop this skill.¹

To the pupil: (Fourth and Fifth Grades) In the following pairs of statements, one is taken from someone's opinion and the other is taken from the careful work of one or more experts. Pick out the one statement in each pair that you think is most likely to be right. You may write the number and letter of the one you choose on a piece of paper.

1. (a) Mother says it was colder last night than it has been any other night so far this year.
(b) According to the weather report, we have had two nights in which the temperature was lower than it was last night.
2. (a) The paper last night had a news story from the United States Bureau of Health. Figures were given to show that the number of cases of flu during last year was greater than during any year in the history of the United States.
(b) Dr. Brown says he is sure there were many more cases of flu during 1918 than there were last year. He says he can remember there being

¹Prepared by Enoch Dumas, Principal of Horace Mann and Cameron Schools, Greeley, Colorado.

so many people sick with flu in 1918 that not enough doctors could be found to take care of all of them.

3. (a) Mr. Jones, who owns a hotel, says there are not nearly as many tourists in the state this year as there were last year.
(b) The Secretary of State says more cars from other states have been registered in our state this year than ever before.
 4. (a) Grandmother says the idea of making cloth from glass is foolish. Everyone knows that glass breaks very easily and so you couldn't possibly make cloth from it.
(b) Mr. Jackson says cloth can be made from glass. He has a sample piece of glass cloth at his store.
 5. (a) "Chimera" did you say? There is no such word. I've never heard of such a word.
(b) A chimera is a story-book monster. Here it is in the dictionary.
2. Having pupils use the cross reference in an index to check upon the accuracy of some statement which they have read. The teacher will have to choose a statement for this exercise which appears in a textbook which has cross references in the index. Accuracy in the statement could be further checked on the sixth grade level by having pupils use cross references in other books that have information about that statement.
 3. Giving pupils practice in checking the accuracy of printed statements by the position of the author as illustrated by the following type of lesson:

To the pupil: (Grade Five) Which of the persons in the list below the questions would you expect to give you the best information on each of the following questions? Write your answer on a sheet of paper numbered to correspond to the numbers of the questions.

1. Do Eskimos actually live in igloos or ice houses?
2. What is the best way to rid cattle of ticks?
3. What makes the milky way in the sky?

4. How can one tell gold ore from ordinary rock which has no gold in it?
5. When should sugar beets be harvested?
6. What should you do to cure a bad cold?

An Arctic explorer	A farmer in Weld County
A miner in Cripple Creek	Your family doctor
A professor of biology at the University of Denver	A professor of animal husbandry at Colorado State College of Agriculture and Mechanic Arts
A professor of astronomy at the University of Colorado	A professor of geology at the Colorado School of Mines

4. Having pupils evaluate the truth of a statement by determining the competency of the person who made the statement. The following lesson is illustrative of this type of exercise.¹

To the pupil: (Grade Six) Suppose you are trying to find out whether the dams to be built across the Columbia River will ruin the great salmon fishing industry. Suppose you found in your reading ten statements made by various people. These statements do not agree and you wish to find out which ones are most likely to be correct. Below are ten such statements and something about each writer. Write on another piece of paper the numbers of those statements you are quite sure are reliable.

1. Susan Adams: All the noise made by the machines in the power house will surely frighten the fish so that they won't dare try to get over the dams. The dams may help make more electric power, but I'm sure they will spoil the fishing industry. (Susan Adams is a housewife. She lives in the city. She has four children in school who enjoy watching the salmon fishing boats come into the docks. She is a high school graduate. Mrs. Adams' hobby is growing flowers.)
2. Gerald Brown: There have always been fish in our rivers. They get over falls and rapids now. I think they will also get over the dams. (Gerald Brown is

¹Prepared by Enoch Dumas, Principal of Horace Mann and Cameron Schools, Greeley, Colorado.

a preacher. He has a church in a small town. Reverend Brown graduated from a small college in the mid-west. The town in which he preaches is situated on the banks of the Columbia River.)

3. John Cramer: Fish will fight to the last ounce of energy to get to the place in which to lay their eggs. I'm sure they will get by any dam equipped with a reasonably good fish ladder. (John Cramer is a fish commissioner. He has been appointed by the Governor to his job because he is very familiar with the fish industry. He has had special interest in the salmon fishing business.)
4. Shirley Jackson: It doesn't seem possible to me that any fish could get by those huge dams the engineers are planning. (Shirley Jackson is a stenographer. She works for a lawyer. She lives in Colorado but has seen the salmon industries on the Columbia River.)
5. Charles Johnson: I have built dams over which the fish go without any difficulty. I am sure I can design and build dams across the Columbia River that will not interfere with the moving of salmon. (Charles Johnson is an engineer. He has designed and built several dams. Mr. Johnson makes a good deal of money designing and building dams. The dams Mr. Johnson has built have been across small streams, which are tributaries to the Columbia River.)
6. Paul Mason: No fish can be expected to get over the great dams being planned for the Columbia River. If these dams are built, they will bring an end to a million dollar fish industry. (Paul Mason is a newspaper editor. Since many of his best advertisers are in the fishing business, Mr. Mason's paper has not been in favor of the building of the dams because of the uncertainty of what it will do to the fishing business.)
7. Burt Olson: I have seen fish go over all sorts of obstacles. I think the salmon will get by the dams. (Burt Olson is a fisherman. He has fished for salmon commercially on the Columbia River for twenty years. Mr. Olson has been very successful in the fishing business.)

8. George Sawyer: You can't put those large dams across the river and expect the salmon to get over them; they just won't do it. (George Sawyer is a high school principal. He has a large school in Portland, Oregon. Mr. Sawyer is very much interested in history. He has written a number of magazine articles on this subject. Many people like Mr. Sawyer.)
9. Henry Smith: Experiments have shown that salmon can get by dams at which properly constructed fish ladders and elevators are built. Of course, these helps must be properly placed so that the fish will find them. I see no reason why dams across the Columbia River should interfere with the salmon fishing industry. (Henry Smith is a professor of marine life at the University of Washington. He has been especially interested in studying salmon. He has written a book entitled, *The Life of the Salmon*. Mr. Smith is a member of a national society for the study of science.)
10. Mary Walker: After seeing the salmon jumping over the falls in the Columbia, I am convinced they can also go up the fish ladders to be built at the dams. (Mary Walker is a school teacher in an elementary school in Astoria, Oregon. Miss Walker likes to see the fishing boats on the Columbia River. She sometimes goes fishing as a hobby. Miss Walker teaches geography; her classes are very interesting.)

It is important that the class discuss their choices, giving reasons why they think some of the people's opinions are reliable while others are not.

Remembering Important Points Read

Ability to remember the important material read may be developed by:

1. Having pupils decide what facts in a given unit are most important to remember
2. Holding pupils responsible for reporting accurately important facts which they have read
3. Making sure that pupils study with a definite purpose in mind

4. Conducting each recitation in such a way that pupils are encouraged to be accurate in recalling the main ideas read concerning a given problem
5. Having pupils write questions about a topic which a given paragraph answers
6. Having pupils read a selection only once with a definite problem in mind, then having them close their books and write in their own words the answer to the problem
7. Having pupils outline or summarize important information (All other activities suggested in connection with organizing material which will prove helpful in remembering material.)

GRADES SEVEN AND EIGHT

This is a period of refinement of specific reading attitudes, habits, and tastes, and should lead to intelligent enjoyment of current events as well as of literary types of reading material.

Suggested Outcomes for Pupils of Average Ability in Grades Seven and Eight

1. Marked growth in all skills developed in the first six grades, especially in those necessary to effective habits of study
2. Increasing ability to discriminate between good and bad reading material of all types
3. A silent reading rate of from 200 to 250 words per minute
4. A knowledge of the different parts that sentences play in forming a good paragraph—one or more being topic sentences and the others explanatory or amplifying sentences which enlarge upon the idea presented in the topic sentences
5. An understanding of how certain uses of the semicolon and colon affect the meaning of reading material
6. Habits of reading a daily paper
7. Habits of wide reading in books and magazines
8. A knowledge of how to use the preface of a book
9. Independence in the use of the dictionary, children's encyclopedias, simple statistical abstracts, card catalogs, readers' guides, etc.

10. Ability to distinguish shades of meaning in words and sentences
11. Refinement of abilities in oral reading; ability to read poetry and dramatic selections orally

Suggested Procedures and Other Teaching Aids

The Use of Basal Readers

A good basal reader of the work type is highly desirable. Most teachers will find it extremely difficult to construct adequate practice exercises for developing reading skills at this level without a good basal reader. In fact, it has been the experience of many teachers that growth in reading is needlessly slowed up at the seventh grade level because teachers attempt to get along without abundant ready-made practice materials. A daily period of from thirty to fifty minutes is recommended. It seems desirable that approximately one-fifth of the total reading time be devoted to oral reading activities throughout the seventh and eighth grades. Suggestions for types of oral reading lessons to use will be found on page 36.

Reading in Connection with Other Classroom Activities

See suggestions for grades four, five, and six. Practically all assignments in connection with other school subjects should be so made as to require wide reading in many fields of knowledge. Practice is needed in reading from several different books, magazines, etc., to find information bearing on one problem. For example, on the eighth grade level a teacher might have each pupil copy on a sheet of paper a problem that the class raised such as "How does a boy or girl learn to become a pilot of an airplane?" Each pupil should be instructed to write under the problem in statement form and in proper sequence facts concerning the problem that he found in his reading.

Much work should be given in the use of easy reference books and common study aids. The following practice exercises are illustrative of a few of the many types that would be helpful.

Using an Encyclopedia

Arrange all volumes of a child's encyclopedia on a desk facing the pupils.

To the pupil: (Grade Seven) In what volume of the encyclopedia would you look to find answers to the following

questions? Write your answers on a sheet of paper numbered to correspond to the numbers of the questions.

- | | |
|--------------------------|-----------------------------|
| 1. How are pencils made? | 5. How does a Diesel engine |
| 2. Why do stars twinkle? | work? |
| 3. What is frost? | 6. Where is the Amazon Riv- |
| 4. How far away is the | er? |
| moon? | |

Check your answers by looking up each question in the encyclopedia.

Selecting the Right Reference Book

To the pupil: (Grade Eight) In which of the following books would you look to find information on the questions that are listed below the list of books? Write your answer on a sheet of paper numbered to correspond to the numbers of the questions.

- | | |
|-----------------------------|------------------------------|
| A set of good encyclopedias | A good history of the United |
| A pamphlet on "Keeping | States |
| Clean" | The World Almanac |
| A book of poems for boys | A free pamphlet on "Care of |
| and girls | the Teeth" |
| A book of astronomy | Your science textbook |
| A world geography book | A book of short stories for |
| | boys and girls |

1. How many bushels of corn were raised in Iowa during the last year?
2. How often should you shampoo your hair?
3. When did Joan of Arc live?
4. Who wrote the "Ballad of the Harp-Weaver"?
5. What weather signs tell when it is likely to rain, to get hotter, to get colder, or to snow?
6. How were the American colonists able to win their independence from a great and powerful nation, the British Empire?

Time and opportunity should be provided for free reading of newspapers, periodicals, and books of factual material.

Opportunities should be given for considerable oral reading to prove a point to the group or to entertain a group of fellow students.

Increasing Vocabulary

Pupils should be encouraged to add to their vocabularies through wide reading. Opportunities should be given for pupils to use in their speaking and writing vocabularies words which they have recently acquired through reading.

Much attention should be given to finding distinctions in meanings of words and expressions. Pupils should be taught the meaning of certain common figures of speech and should have practice in discussing them and in deciding what is meant by a given figure of speech in several settings.

The use of a dictionary should become a habit at this level.

EVALUATING THE PUPIL'S WORK

Following the reading of practically every selection, some check of comprehension should be made. Teachers are urged to use the suggestions for evaluating pupils' reading that are included in the basal readers at the end of almost every lesson and in the teachers' manuals. Often these aids will need to be supplemented by teacher-made tests of which the following are examples:

Objective Tests of the Yes and No Type (Example, Grade Two)

Did Bob find his dog?.....Was the dog black?.....

Was the dog old?.....Did Bob take care of his dog?

.....

Objective Tests of the True-False Type (Example, Grade Four)

.....John was a Puritan boy.

.....John read by candlelight.

.....His sister's name was Priscilla.

Objective Tests of the Completion Type (Example, Grade Five)

The wood from hickory trees is very valuable for making.....,, and.....

The hickory nut meats are used in making,, and

Hickory nuts ripen in the

Objective Tests of the Multiple Choice Type (Example, Grade Three)

Tony was a (1) cat (2) dog (3) rabbit.

He lived in a (1) house (2) barn (3) coop.

There were (1) six (2) ten (3) two in his family.

Tony (1) chased (2) ate (3) played with the chicks.

Objective Tests of the Matching Type (Example, Grade One)

1. Choosing one sentence from a group of sentences to match with a picture.

Picture of a
girl running

The girl is walking. The girl is sitting.
The girl is running. The girl is dancing.

2. Choosing one picture from a group of pictures to match with a sentence.

The boy is running after a wagon.



Four different pictures.

3. Matching one sentence with one picture from among several possible sentences and pictures.

Baby

Sally

Pictures

Dog

Mother

To the Pupil: Cut out and paste under the right picture.

Sally is a little girl.

This is baby.

This is mother.

This is a dog.

The illustrative practice exercises on the comprehension, location, selection, organization, evaluation, and remembrance of material included in the reading program by grades, pages 21 to 30, are also suitable for use as tests to evaluate pupils' work.

Teachers are urged to observe the silent and oral reading of individual pupils and to make note of their reading habits both good and bad. Later appropriate remedial practice exercises should be administered to pupils showing particular reading difficulties.

It is recommended that a reliable standardized test in reading be administered about a month before the close of the school year. If possible, two forms of the test should be used in each grade, one near the end of each semester. It is also recommended that reading tests from the same series be used throughout a given school thus making possible grade to grade comparisons in growth in reading.

SUGGESTED ADAPTATIONS OF THIS PROGRAM FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

Because of the small number of pupils in each group and the limited time in a school day to handle all of the classes in one- and two-teacher schools, it is necessary whenever possible to combine groups of children for reading classes. The following groupings are recommended: grade one working alone; grades two and three working together; grades four, five, and six working together; and grades seven and eight working together. These groupings are not recommended for lessons in the basal reader which children can do independently. These groupings can be used to advantage in connection with most practice exercises such as those in this course illustrating the development of reading skills in comprehension, selection, location, organization, evaluation, and remembrance of material.

For a more complete treatment of this subject, see the State Department of Education Bulletin entitled *Adapting the Reading Program to the Needs of the Individual Child*, which may be secured free from your county superintendent.

SPECIAL HELPS IN TEACHING READING

Suggestions for Instruction in Oral Reading

The knowledge and skills necessary for good oral reading will be found under Suggested Outcomes for Pupils of Average Ability for each grade. The following are types of lessons which have proved to be effective in teaching oral reading.

1. Oral reading following the silent reading of certain lessons in the basal reading in the primary grades for the purpose of checking the pupils' pronunciation, enunciation, and comprehension. Sometimes it is advisable to have each pupil read aloud only a short part of a story rather than all of it.
2. Group practice lessons in which the teacher and pupils first set up standards for good oral reading. It is advisable for the teacher to write these standards on the board as pupils dictate them. Each pupil then reads aloud in turn to the class. Listeners may or may not have copies of the material read. As each pupil finishes reading, he asks the class for criticism. For this type of lesson only easy reading material should be used. All criticisms are given in the light of the standards agreed upon. The class suggests ways of improvement.
3. Practice lessons in which pupils prepare to read a story, poem, or play to another group. After each child reads his part, the class criticizes his reading in the light of standards set up, and tells him how to practice further to improve his reading before the selection is presented to the audience.
4. Special drill lessons in which each pupil practices on some special weakness in oral reading, such as pronunciation, enunciation, voice, etc. This work should be done individually or in very small groups having a common difficulty and must be carefully directed by the teacher. The rest of the class need not listen, but should be engaged in some other work.
5. Practice lessons in sight reading in which pupils read in turn some easy material which they have not seen before. The class should be encouraged to listen attentively and offer constructive criticisms to each reader. Only very easy and interesting material should be used for such lessons. Only the teacher and the oral reader should have copies of the material being used.

Diagnostic Work and Remedial Instruction

While every effort should be made through correct and adequate teaching of all important reading skills to prevent the development of remedial cases in reading, a few such cases do appear in most schools. There are innumerable causes of read-

ing difficulties. A few of the most common are: low mentality; immaturity; defective vision, hearing, and speech; general poor health; emotional disturbances; inadequate spoken or written vocabularies; inefficient training in skills needed in study.

These difficulties should be determined and attacked as soon as possible. While some exercises will need to be adapted to the specific difficulties of individual pupils, the following suggestions to teachers have proved to be almost universally effective in improving reading.

1. Do what is possible to correct eye, ear, and speech defects. It is usually wise to recommend an examination by a specialist.
2. Enlarge the spoken and reading vocabularies through providing related experiences in other school subjects and through vocabulary exercises.
3. Avoid any chance of increasing emotional blocking by keeping the reading period a pleasant and calm one. During that period do no disciplining of naughty pupils, avoid undue excitement, tension, or disorder. Try to enter into the spirit of the selection read and encourage pupils to do so. In other words, the teacher should do everything she can to make the reading period an enjoyable one.
4. Give help promptly and pleasantly when it is needed.
5. Give pupils much practice in reading very easy material of high interest value. Modern readers are so attractive in bindings, illustrations, and content, and have no grade labels on them, so that this should not be a hard task.

In making a specific analysis of the reading difficulties of individual pupils, a teacher's chart similar to the following may be helpful:

Special Needs in Reading			
Names of children	Greatest present need	Special help given	Note on progress

The whole problem of remedial reading is treated adequately in Chapter VII in the free curriculum bulletin, *Adapting the Reading Program to the Needs of the Individual Child*, by Mr.

Dwight Hamilton. Each teacher should write to his county superintendent for his copy if he does not already have one. The bulletin contains helpful suggestions on all aspects of reading.

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THE PROGRAM IN COMPOSITION

WHY COMPOSITION SHOULD BE TAUGHT

The ability to express one's self clearly and forcefully both orally and in writing is of the utmost importance in life. The program for oral and written composition in the school should parallel the life situations in which spoken and written English is used so that pupils will have the chance to learn items that are important in the ordinary affairs of life. The situations of life in which composition is used fall naturally into two groups, oral and written. The following are the most common life situations in which oral composition is used:

1. Engaging in conversation including such social courtesies as making introductions, expressions of appreciation, congratulations and sympathy, and participating in group discussions
2. Relating stories, anecdotes, jokes, etc.
3. Using the telephone
4. Making announcements, explanations, and giving directions
5. Giving informal speeches, book reviews, talks, and reports
6. Conducting meetings

The following are the most common life situations in which written composition is used:

1. Writing letters, including notes, social letters, business letters, invitations, notes of acceptance, thank-you letters, etc.
2. Filling in forms
3. Keeping records
4. Writing announcements, notices, advertisements, explanations, and directions
5. Writing reports, book reviews, and summaries
6. Making notes, outlines, memoranda
7. Making a bibliography.
8. Engaging in creative writing, including stories, poems, themes, etc.

HOW COMPOSITION MIGHT FUNCTION IN OTHER ACTIVITIES

In a way, every lesson is a composition lesson, since speaking and writing form an integral part of all school activities. Although in all grades it is recommended that a definite daily period be set aside for instruction and practice in special aspects of language in order to secure mastery, much vital language work will come in connection with its use in other school activities. Integrating the program in composition with other subjects may be accomplished in three ways:

1. The subject matter used for practice exercises in composition, such as lessons in conversation, use of the telephone, writing letters, making reports, etc., might be selected from the subject matter then being taught in some other school subject, such as social studies, literature, art, science, and health, or from pupils' experience outside of school. Instruction in and practice exercises on how to be an interesting conversationalist, how to write a business letter, how to make a book report, etc., should be given during the composition period, but the content of what is said in the conversation practice or what is written in the letter or book report should be closely related to some other school activity or to the pupils' experiences outside of school.
2. Another way in which the program in composition can be made to function in other school work is through each teacher's insistence that correct standards in oral and in written English appropriate to the grade he is teaching be maintained in his class, regardless of the subject matter.
3. Other school subjects should be taught in such a way that pupils will need to use the language skills they have learned.

A SUGGESTED PROGRAM IN COMPOSITION BY GRADES

GRADE ONE

Suggested Outcomes for Pupils of Average Ability

1. The ability to participate in a conversation and in class discussion
2. The ability to relate clearly an interesting but simple personal experience

3. The ability to tell a simple original story of at least three sentences
4. The ability to dictate as a group and as individuals simple poems and jingles for the teacher to write
5. The ability to retell a short first-grade story
6. The ability to answer the telephone correctly and to make a simple telephone call to a person whose phone number the pupil knows
7. The ability to make informal introductions, such as to introduce the pupil's mother to his teacher
8. The ability to express appreciation for favors and to acknowledge compliments sincerely and graciously
9. The habit of speaking loud enough to be heard by everyone in the group
10. The habit of sounding the beginnings and endings of words distinctly
11. The habit of being quiet and attentive while others are talking
12. Elimination of "baby talk"
13. Elimination of the most flagrant and common grammatical errors such as the incorrect use of *saw, seen; come, came; did, done; ain't; runned* for *ran*, etc. (See page 58.)
14. The habit of capitalizing the pronoun *I*, and the first letter of the beginning word of a sentence and of each of the child's own names
15. The habit of putting a period at the end of a telling sentence and a question mark at the end of an asking sentence
16. The ability to write a simple sentence
17. The ability to dictate and to copy simple notes, letters, and invitations containing a salutation, a body, and a signature
18. The ability to write simple notes, letters, and invitations (At first these will have to be group efforts and carefully directed by the teacher; but by the end of first grade, many of the pupils should be able to write them independently. They should be only two or three sentences in length.)
19. A knowledge of the correct punctuation, capitalization, and placement of the salutation and the signature of a letter

20. In addition to the regular spelling list, a knowledge of how to spell the words: dear, first grade, and the child's own name
21. The ability to find the date on a calendar and write it

Suggested Procedures and Other Aids for Teaching

The language work in first grade should be almost entirely oral. A special period set aside for the teaching of composition is not essential. Many first-grade teachers find it possible and desirable to teach all the skills needed through their use in other school activities. For the average school, however, a special daily composition period of about fifteen minutes in length is recommended.

Most of the language lessons of this grade level should be devoted primarily to having pupils:

1. Talk informally together about their experiences at home and in school and discuss problems that arise in connection with various school activities such as: How shall we arrange the flowers to make our room more attractive? How shall we take care of the rabbits that are in the pet cage? Why should we always wash our hands before eating? What safety rules can we make about using the slides, teeter-totters, and swings on our playground? Of what shall we make our toy boat so it will float? What were the most interesting things we saw when we visited Jack's father's farm?
2. Dramatize informally how one should introduce his mother to his teacher, reply to a compliment, and thank someone who has done him a favor.
3. Tell and dramatize short stories that they have read or that have been read or told to them.
4. Dictate as a group for the teacher to write on the board or on a chart short stories, reports of excursions, records of garden plans, etc., notes, letters, invitations, announcements, news items, and poems of three or four lines in length.
5. Through games and informal sentence exercises, practice using orally such words as *saw* and *seen*, *come* and *came*, *did* and *done*, etc., to eliminate the most common grammatical errors.

6. Practice writing simple sentences, statements, and questions on the board or on paper as the teacher or pupils dictate them. (Toward the end of first grade, pupils may write statements and questions of their own composition.)
7. Toward the end of first grade, write individual records, notes, announcements, reports of trips, stories, and poems of two or three sentences in length.
8. Read orally easy stories and poems to practice sounding words distinctly and using their voices so that everyone in a group can hear and enjoy what is read.

GRADES TWO AND THREE

Suggested Outcomes for Pupils of Average Ability by the End of Grade Two

1. Further development in all first-grade skills
2. The ability to speak clearly before an audience in making an announcement, relating a simple experience, dramatizing a story, etc.
3. The ability to introduce correctly a child to an adult
4. A knowledge of what to say and do when one gets a wrong number in telephoning or when one answers the phone when another number is wanted
5. The ability to write a simple story of about three sentences
6. A knowledge of how to place simple written work on a page, leaving correct margins and placing the title correctly
7. A knowledge of capitals in writing names of people, the days of the week and the months
8. The ability to write simple social letters, informal invitations, notes of thanks and greetings of about three or four sentences each (This includes the knowledge of how and where to write the salutation, the greeting, the body, the ending, and signature or name.)
9. In addition to the regular spelling list, the ability to spell such words as *Mr.*, *Mrs.*, *Miss*, and *second grade*
10. The elimination of certain grammatical and speech errors (See pages 58-61.)

11. The ability to fill in blanks calling for name, grade, sex, age, telephone number (At this level pupils should be able to copy the teacher's name and the name of the school in blanks when needed.)

**Suggested Outcomes for Pupils of Average Ability
by the End of Grade Three**

1. Further development in all skills listed for first and second grades
2. The ability to tell a simple, organized story or experience to an audience
3. The ability to recommend a book to the class, giving the title, author, and a brief statement of what the book is about
4. The ability to give orally directions and simple explanations
5. The ability to greet courteously visitors to the school and to the home
6. The ability to introduce correctly a boy to a boy, a girl to a girl, a boy to a girl, a man to a lady, a young person to an older one
7. The ability to deliver correctly a message given over the telephone
8. The elimination of several of the most common grammatical and speech errors (See pages 58-61.)
9. The ability to distinguish between a sentence and a group of words that is not a sentence
10. The ability to keep sentences apart, that is, to avoid run-together sentences
11. The ability to write correctly three or four related sentences following proper sequence
12. The ability to select an appropriate title for a story
13. The ability to capitalize names of special holidays, titles of books, stories and magazines, names of schools, states, cities or towns, streets, lines of poetry, names of animals, and such titles as *Mr.*, *Mrs.*, *Miss*
14. A knowledge of how to place a period after abbreviations and initials
15. A knowledge of how to use the apostrophe in common contractions as *I'm*, *doesn't*, etc.

16. A knowledge of how to plan a simple letter, organize what one has to say in it, and write it correctly (This includes a knowledge of how and where to write the heading of a letter containing the pupil's school address or his own home address and the date in addition to the other four parts of a letter.)
17. A knowledge of how to address and stamp an envelope and mail a letter
18. The ability to write simple class and individual poems or jingles

Suggested Procedures and Other Aids for Teaching

A daily language period of from fifteen to thirty minutes in length is recommended, but some teachers prefer to teach the needed skills in connection with other school activities. This daily language period should be composed of activities similar to those outlined for the first grade on pages 42 and 43.

In addition to the daily language period, it is important that teachers use every opportunity possible to have children practice in all other school subjects the language skills which they have learned in the language period.

A well-chosen textbook and work book in language can be most helpful to pupils in acquiring language skills at these grade levels.

GRADES FOUR, FIVE, AND SIX

Suggested Outcomes for Pupils of Average Ability by the End of Grade Four

1. Improvement in all skills listed for the first three grades
2. The habit of observing common courtesies in conversations and group discussions as: giving every one in the group a chance to talk; listening attentively to what others say; refraining from interrupting when someone else is talking; not talking long at a time; taking an active part in the discussion or conversation by telling or asking something of interest about a topic
3. The ability to make formal introductions with ease in various situations and to acknowledge an introduction
4. The ability to use a telephone directory; a knowledge of how to use the telephone to get help in an emergency

5. The ability to relate in four or more well-organized sentences a familiar experience or story to an audience
6. The ability to make a simple report on some phase of work in social studies, science, etc.
7. The elimination of several common grammatical and speech errors (See pages 58-61.)
8. The ability to recognize, write, and punctuate correctly statements, questions, and exclamatory sentences
9. The ability to combine short related sentences into one longer, more interesting sentence
10. The ability to write without error four or more well-constructed sentences showing proper sequence and good paragraph form
11. The ability to write notices, advertisements, and clear-cut descriptions
12. The ability to write a social letter of more than one paragraph in length
13. The ability to write a short business letter
14. The knowledge of how to avoid trite and useless expressions in letter writing, as: *I wish that you were here too; I will now write you a letter.*
15. A knowledge of how to write a return address on an envelope
16. A knowledge of the type of paper appropriate for business and for social letters
17. An understanding of the general principles to observe regarding the content of a social letter and a business letter
18. In addition to the spelling list, the ability to spell the names of the months, the words *truly, sincerely, sir, madam, and gentlemen*
19. The ability to capitalize the name of a company, the name of a special product, the words *sir, madam, and gentlemen* in the greeting of a business letter, direct quotations, the abbreviation *Dr.* and an initial when it stands for the name of a person
20. A knowledge of how to use the apostrophe to show possession
21. A knowledge of how to use the comma to separate words or groups of words that name a series, to separate the day of a month from the year in a date, to separate the name

of a city from the name of the state in which it is located, to set off *yes* or *no* at the beginning of a sentence when yes or no answers a question, as in *No, the book you sent me has not come yet.*

22. A knowledge of how to use the colon at the end of the greeting of a business letter
23. The ability to fill in blanks calling for the pupil's father's name, mother's name, nationality, and mother's maiden name
24. The ability to write direct quotations
25. The ability to use the dictionary as an aid in spelling and in understanding the meaning of a strange word
26. The ability to recommend orally a book or a motion picture to the class, giving all of the appropriate and interesting facts necessary to stimulate the class to want to read the book or want to see the picture

**Suggested Outcomes for Pupils of Average Ability
by the End of Grade Five**

1. Increased skill in all items in the first four grades
2. The ability to relate a familiar experience clearly and forcefully before an audience (A good beginning and a good summarizing sentence should be used. The talk should be well organized.)
3. The knowledge of when and where it is appropriate to carry on a conversation
4. A knowledge of how to disagree courteously with a remark made by someone else
5. A knowledge of appropriate and of inappropriate topics of conversation for certain occasions such as during a meal, at a party, etc.
6. The ability to participate in both formal and informal discussions, observing all of the common courtesies and sticking closely to the topic
7. The elimination of several of the most common grammatical and speech errors. (See pages 58-61.)
8. The ability to make a short but well-organized report related to school activities, stating the subject of the report, the sources used, and the information obtained

9. The ability to use an outline in planning for a talk or for written work
10. The ability to give directions orally and in writing
11. The ability to write a business letter of some length in which the content is appropriate in every respect
12. The ability to write a friendly letter of some length in which the content is interesting, both to the writer and the person to whom the letter is written
13. The ability to write a short bibliography arranged in alphabetical order by authors
14. The ability to fill in blanks on a postal money order, and on a library loan card
15. The ability to take simple notes in outline form on material read
16. The ability to capitalize names of buildings, halls, clubs, classes, nationalities of persons or of groups of persons, important words in names of geographical areas, and of the items used in outlining
17. A knowledge of how to use the comma of address as *How many fish did you catch, Joe?* and the comma to set off appositives as *Uncle Bill, who is my favorite uncle, sent me a scout knife.*
18. A knowledge of how to use a hyphen to divide a word at the end of a line when necessary
19. A knowledge of how to number and punctuate an outline
20. A knowledge of how to write direct quotations including divided quotations
21. A knowledge of how to use a dictionary to pronounce words and to divide words into syllables (This necessitates an understanding of how to use the key words in a dictionary to interpret diacritical markings in that dictionary.)

**Suggested Outcomes for Pupils of Average Ability
by the End of Grade Six**

1. Growth in all skills taught in the preceding grades
2. The ability to talk pleasingly and interestingly on a familiar subject for one or two minutes
3. The ability to follow up an introduction with appropriate conversation

4. The ability to conduct a meeting, act as chairman or as any other officer
5. The ability to summarize a discussion orally and in writing
6. The ability to introduce a speaker
7. A knowledge of when and how to give appropriate expression orally and in letters to feelings of appreciation, sympathy, and to extend congratulations
8. The ability to make a book report giving a summary of the essential content of the book, and yet stimulating the audience to want to read the book
9. Skill in writing friendly letters of distinct interest
10. A knowledge of capitals as used in the names of departments of government; famous events or documents; school subjects that are the names of nationalities, as English or Spanish; churches; religions; the Deity, and the Bible (Pupils should also know how to capitalize such words as *North*, *South*, *East*, and *West* when they are used as a name or as part of a name of a geographical area.)
11. The use of the colon in writing dialogue
12. A knowledge of the meaning of the dash, the comma, and the semicolon when used in an index
13. A knowledge of the following items in grammar:
 - a. The complete subjects and complete predicates of simple sentences
 - b. The simple subject and simple predicate of simple sentences
 - c. The parts of speech—nouns, verbs, pronouns, adjectives, adverbs, conjunctions, prepositions—and the part each plays in building a good sentence
 - d. Common and proper nouns
 - e. Positive, comparative, and superlative degrees of adjectives and adverbs
 - f. Singular and plural forms of nouns and pronouns
14. The ability to improve the interest of letters, stories, reports, etc., by arranging the parts of sentences in different ways (For example, the subject may be placed first, or last, or it may be placed between the parts of the predicate as: *The train sped across the prairie at ninety miles*

an hour. Across the prairie at ninety miles an hour sped the train. Across the prairie the train sped at ninety miles an hour.)

15. The ability to recognize and punctuate correctly declarative, interrogative, exclamatory, and imperative sentences

Suggested Procedures and Other Aids for Teaching

Throughout the intermediate grades, language work should be predominantly oral—about three-fifths oral to two-fifths written. A daily composition period of from twenty to thirty minutes in length in which specific composition skills are taught and practiced is recommended. Throughout these grades the content of letters, reports, stories, book reviews, etc., should be stressed in addition to teaching pupils the correct form to use in writing them. All grammar taught should be functional. Each item in grammar should be presented and practiced in such a way that pupils realize how that item will help them speak and write more correctly and effectively. Well-selected textbooks and whenever possible, good work books as well, are recommended.

GRADES SEVEN AND EIGHT

Suggested Outcomes for Pupils of Average Ability by the End of Grade Seven

1. Further development in all skills taught in previous grades
2. The ability to speak from three to five minutes from an outline
3. The ability to speak extemporaneously for about a minute on a very familiar subject
4. A knowledge of effective ways to start a conversation
5. Skill in drawing everyone in a group into the conversation
6. The ability to converse with ease at social functions
7. The ability to "proof read" one's own written work
8. Skill in classifying sentences as to form, use, and meaning
9. The ability to write a short, forceful editorial
10. Skill in taking notes in outline form necessary in studying the content subjects
11. Ability to construct sentences in which subject and predicate agree in number

12. A knowledge of the following items in grammar :
 - a. Compound subjects and predicates
 - b. Compound sentences
 - c. Transitive and intransitive verbs
 - d. Nominative, accusative or objective cases of pronouns
 - e. Predicate nominative of pronouns
 - f. Direct and indirect objects
 - g. Indefinite pronouns
 - h. Prepositional phrases
 - i. Tenses of verbs

**Suggested Outcomes for Pupils of Average Ability
by the End of Grade Eight**

1. Skill in all fundamental mechanics taught in the preceding grades
2. Further growth in all other items listed in the grades
3. The ability to talk effectively for several minutes on a prepared topic
4. Skill in writing business and friendly letters correct as to form and content
5. A knowledge of the most common figures of speech and of how to use them in speaking and writing
6. A knowledge of how and when to write formal invitations and replies to such invitations
7. The ability to take notes from a lecturer, a classmate's oral report, the discussion at a meeting, etc.
8. Skill in conducting meetings
9. A knowledge of the following items of grammar :
 - a. Gender
 - b. Voice
 - c. Mood
 - d. The gerund

Pupils at this level should have a sufficient knowledge of functional grammar to be able to detect and correct their own grammatical errors.

Suggested Procedures and Other Aids for Teaching

The language work of the seventh and eighth grades should be about equally divided into oral and written composition. At these levels pupils should strive consciously for improvement in style of speaking and of writing. Of necessity some attention must be given to correct form, but care should be taken not to reduce, in the pupil's thinking, the importance of the content of what one says or writes. A daily language period of not less than thirty minutes in which specific language skills are taught and practiced is recommended. Well-chosen textbooks and, whenever money will permit, work books also are recommended.

EVALUATING THE PUPIL'S WORK

Teacher-made tests to check up on special skills and knowledge taught should be given at frequent intervals. These should include sentence tests, paragraph tests, letter tests, outline tests, and tests in correct usage of word forms, etc. Textbooks contain valuable suggestions and materials for testing.

Standardized tests which measure progress in the relation of personal experiences in oral expression, in written composition, and in the knowledge of certain correct grammatical expression are available. Such tests are helpful, but not essential. Teacher-made tests and tests in good textbooks and work books are more useful in diagnosing individual difficulties and in enabling the teacher to check up on the specific skills taught.

SUGGESTED ADAPTATIONS OF THIS PROGRAM FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

First and second grade pupils may be grouped together for all oral work such as carrying on conversations, dictating group letters, compositions, stories, and poems, and most of the language activities suggested for the language period on the first grade level. (See pages 42-43.) In developing the beginning skills in writing, the two grades will have to be separated and much individual aid given to each pupil.

For the rest of the language program the following groupings of grades could be made: Grades three and four working together; grades five and six working together; grades seven and eight working together.

SPECIAL HELPS IN TEACHING COMPOSITION

Teaching Conversation and Group Discussions

While conversation is practiced incidentally in connection with almost all school activities there should be definite periods devoted to teaching directly and practicing specifically the important knowledges, skills, habits, and attitudes necessary to good conversation. Some of these are:

1. Having something interesting to talk about (Pupils should be taught that important sources of ideas are wide reading, contacts with interesting people, keen observation of happenings, listening to radio programs, and other varied experiences. They should be stimulated to gather information from these sources and use it in their conversation.)
2. Having a pleasing vocabulary adequate to express ideas effectively (Every opportunity should be utilized to have pupils add new words to their spoken and written vocabularies and use them often enough that they are not forgotten.)
3. Observing common courtesies in conversation, such as how to participate in a conversation without monopolizing it, how and when one may interrupt another, how to disagree with another, how to include all members of a group in the conversation, how to join a group or excuse one's self from a group conversing together, how to be enthusiastic without being excited or noisy, how and when to make and acknowledge introductions, how to speak in a pleasing voice suited to the size of the group, how to introduce appropriate topics and steer the talk away from inappropriate ones, etc.
4. Knowing when and where it is and is not appropriate to converse
5. Knowing what to do and say at social affairs
6. Knowing what to do and say during a business interview
7. Avoiding unpleasant mannerisms
8. Being a good listener
9. Sticking to the topic in all discussions

Some of these knowledges, skills, and attitudes should be taught in each grade and real improvement in ability to converse

and to participate in group discussions should be apparent in each succeeding grade.

Teaching Letter Writing

Some instruction in letter writing should be given in each grade as indicated in the program by grades. Some skills, knowledges, and attitudes which need special emphasis are:

1. The different parts of a letter, the purpose and relative position of each part, and how to write the parts correctly
2. Sensitivity to situations which call for the writing of letters, such as writing to thank the sender of a gift or a host or hostess who has entertained one or a business firm which the class has visited; writing a letter of condolence to a friend who is in trouble; writing a letter of congratulations to a friend who has won an award or had some good fortune, etc.
3. The differences between a business and a friendly letter as to form, content, and appropriate stationery to use, etc.
4. The factors that make a friendly letter interesting in content

The following standards for making a letter interesting might be of help to pupils:

- a. Think of interesting things that have happened that the person to whom you are writing would like to know about. Many boys and girls find it helpful to make a list of these topics.
- b. Choose a few of the topics to write about in your letter.
- c. Write enough about each topic to make your letter fun to read and easy to understand.
- d. Write something in your letter to make your friend feel that your letter is for him especially and not just for anyone.
- e. Express your opinion or how you feel about some of the topics in your letter.
- f. Answer questions that your friend has asked in his letter to you.
- g. Avoid using useless and uninteresting remarks such as *I will write you a letter* or *I wish you were here*.

5. Rules about the content of a business letter. The following may be helpful to teachers:
 - a. Tell everything that the person to whom you are writing will need to know in order to do what you want him to do.
 - b. Do not tell in your letter any unnecessary things.
 - c. Be careful not to tell the same thing more than once.
 - d. Give the purpose of your letter in the first part of it.

The teacher should utilize every opportunity which arises in connection with other activities to have pupils write and mail real letters. Pupils should be taught that the most important thing about any letter is its content. Some letters should be read aloud and the contents constructively criticized by members of the class and the teacher. It is usually advisable to have the class discuss points of interest to tell in their letters before they actually start writing them. Stimulate each pupil to write naturally what he wishes to say in his letter. Neatness, attractiveness, and correctness in form must be adhered to in all letter writing.

Teaching the Making of Reports

Beginning with the fourth grade, it is recommended that pupils should be given some specific instruction concerning the contents and organization of a good report. It is recommended that this instruction be given in the language period when the pupils have a real need for making a report in connection with some other school subject such as social studies, science, or health. The following standards which pupils, under the guidance of a teacher, may set up for making a report should be helpful:

1. Choose a topic in which you and your classmates are interested.
2. Choose a topic about which you know or can find enough information to make a report that your classmates will enjoy listening to.
3. Choose a topic that is not too broad for you to make a report on in your share of the class time. For example, do not talk about "Modern Trains." Instead, limit your report to one topic about modern trains, such as, "A Trip Through the Newest Streamliner."

4. Make all of your sentences in a paragraph tell about the topic of that paragraph.
5. Arrange your sentences and your paragraphs so that things are told in the order in which they happened or in which they should be done.
6. Be sure that you report facts accurately.
7. If you have learned to make a good summary and your report is a long one, end it with a summary sentence or a summary paragraph.

Teaching Book Reports

While most of the book reports which children make should undoubtedly be made in the literature period and not in the language period, it is important for teachers to give children specific instruction on how to make a good book report. This can well be done during the language period and should be presented at the time that pupils are ready to make book reports in literature. Pupils and teachers must have clearly in mind the fact that the chief purpose in making a book report is not to prove that one has read the book, but instead to share with classmates an interesting reading experience which one has had and to interest them in wanting to read the book. The following standards for making a book report may be helpful:

1. Choose a book which you have enjoyed reading, which you think your classmates would like to read, but which you think most of them have not yet read.
2. Tell the name of the book and of the author. Show the book to the class if you can.
3. Tell what the book is about.
4. Tell why you like the book.
5. Tell or read one of the most interesting or funniest parts of the book if you have time.
6. Show some of the pictures in the book to your classmates.
7. Tell where your classmates can get the book.
8. If the author of the book has written any other books that you enjoyed reading, tell the names of them.
9. Tell whether you think your book is of special interest to girls or boys or both.

10. Try to answer any questions which your classmates might ask you about the book.
11. Be careful not to use more than your share of the class time. (See also the Program in Literature.)

Teaching Pupils to Tell or Write Stories

Because of their use in life situations, pupils should be given instruction and practice in telling short stories and anecdotes at each grade level. Through group discussions, pupils should be led to see that the chief differences between a story and a report are:

1. The main purpose of telling a story is to entertain someone, whereas the purpose of giving a report is to give important information to someone else.
2. A story has in it a surprise or something funny or exciting, whereas a report need not have any of these.
3. The things that one tells in a story may or may not be true, but in a report they must all be true.

The following standards for telling or writing an interesting story may be helpful:

1. Think of an interesting experience that you have had, or have heard, or have read about. Choose a topic that you think your classmates will enjoy hearing or reading.
2. Try to give your story a clever title which will make your classmates want to read it or hear more about it.
3. Make a good beginning sentence for your story. Try in that beginning sentence to get your story started by telling something important to the story.
4. Tell enough about what happened to make your story easy to understand and fun to listen to or read.
5. Try to tell things in the order in which they happened.
6. If your story has a surprise in it, tell the surprise near or at the end of your story.
7. When you can, use direct quotations to add interest to your story.

Teaching Creative Writing

In a sense all writing in which pupils express their own ideas and opinions is creative. Such an expression may take the form of writing letters, reports, book reviews, newspaper articles, edi-

torials, diaries, short stories, plays, and poems. Creative writing in all of the forms in which pupils give expression to their own ideas vitalizes the whole program in composition and makes for increased fluency and skill in all phases of written work. In all creative writing, each child must use his own ideas and his own language in expressing them. It follows that he must choose his own topic and must be encouraged to write about something that is familiar to him, preferably about something that he has actually experienced. School newspapers or news sheets, even the simplest ones, furnish excellent motivation for all aspects of creative writing.

Elimination of Grammatical Errors

Not much progress in the elimination of grammatical errors will be made until each pupil can be led to want to use correct English, until he is aware of specific errors he is making, until he has had explained to him the correct usage of each item he is misusing, and until he has had abundant oral and written practice in the correct usage of it. A study of the grammatical principles which apply to specific errors made should be of value to pupils in the sixth, seventh, and eighth grades.

Grammatical errors vary somewhat from one locality to another. For this reason, each teacher needs to note the particular errors which are prevalent among her pupils and plan to eliminate these errors through appropriate instruction and adequate training on correct forms. The following graded list of correct usage items is based upon a compilation of studies made to determine the most frequent grammatical errors of American children.

Grade One

Saw, scen; did, done; come, came; went, gone.

Me for I; her or him for she or he.

Such peculiar individual errors as *hern* for *hers*; *runned* for *ran*; *bringed* for *brought*; *tooked* for *took*; and baby talk.

Grade Two

Review grade one.

Is, are; was, were; ran, run.

Misuse of negatives such as *hasn't no* instead of *hasn't any*; *ain't* instead of *am not* and *is not*.

Grade Three

Review lists for grades one and two.

Eat, ate, eaten; give, gave, given; isn't, aren't; wasn't, weren't.

Avoiding the double negative. Using such words as *nowhere, never, none, nobody, anybody* correctly.

Speaking of yourself last in such expressions as *John and I; Mother, Bill, and I.*

Grade Four

A review of items for grades one, two, and three.

A, an; bring, brought; can, may; let, leave; good, well; took, taken; began, begun.

Grade Five

A review of items of preceding grades.

Break, broke, broken; drank, drunk; drove, driven; grew, grown; knew, known; rang, rung; sang, sung; sit, sat, set; threw, thrown; tore, torn; wore, worn; wrote, written; don't, doesn't.

Grade Six

A review of items of preceding grades.

Blew, blown; chose, chosen; flew, flown; freeze, froze, frozen; lay, laid, laying, lie, lain, lying; learn, learned; teach, taught; ride, rode, ridden; speak, spoke, spoken; steal, stole, stolen; swam, swum; this, that; these, those, them; we girls, us girls; who, which.

Incorrect use of prepositions such as *off of* or *off from* for *off*; *different than* for *different from*; *in* for *into*; *to* for *at*; *between* for *among*.

Adjectives and adverbs such as *clear, clearly; sure, surely; different, differently.*

Grade Seven

A review of items listed for the preceding grades.

They, them (Use *they* as the subject, never *them*: "*They* are the right ones", not "*Them* are the right ones". Use *they* as the predicate nominative, not *them*: "The men at the store are *they*", not "The men at the store are *them*".); *do, does; his or hers, their; he, they; himself, themselves; most,*

almost; besides, beside; all the farther, as far as; place for where; real, really; kind of a; in back of for behind; at about, to about; like, as; on account of; shall, will.

Use of the indefinite *they*.

Position of such modifiers as *only, almost, nearly, scarcely*.

Grade Eight

Dangling participles; split infinitives; possessives before gerunds; *who, whom*.

Elimination of Speech Errors in Enunciation and Pronunciation

In addition to specific instruction in the improvement of volume and quality of voice, it is recommended that teachers give instruction and practice in clear and correct enunciation and pronunciation of words. These practice exercises should be spread throughout the grades. It is recommended that emphasis be placed upon the elimination of the following types of errors:

1. Wrong vowel sounds: *git* for *get*; *min* for *men*; confusion of *pin* and *pen* and *tin* and *ten*; *fur* for *for*; *jist* or *jest* for *just*; *sich* or *sech* for *such*; *kin* or *ken* for *can*
2. Omission or slurring of endings of words: *runnin'* for *running*; *yeller* for *yellow*; *hol'* for *hold*; *ole* for *old*
3. Incorrect sounds at the beginning of words: *wite* for *white*; *y* for *why*; *win* for *when*; *dat* for *that*; *den* for *then*; *yump* for *jump*
4. Slurring of groups of words: *lemme* for *let me*; *gimme* for *give me*; *commere* for *come here*; *gonna* for *going to*; *won'tcha* for *won't you*
5. Omission of syllables: *Febrary* for *February*; *liberry* for *library*; *histry* for *history*; *'rithmetic* for *arithmetic*; *Ar-tic* for *Arctic*; *pome* for *poem*
6. Addition of syllables: *drownded* for *drowned*; *atheletic* for *athletic*; *aireoplane* for *airplane*; *acrosst* for *across*
7. Emphasizing the wrong syllable: *mischie'vous* for *mischievous*; *president'* for *president*; *thea'ter* for *theater*; *interest'ed* for *interested*; *favorite'* for *favorite*
8. Miscellaneous mispronunciations: *pitcher* for *picture*; *becuz* for *because*; *hunderd* for *hundred*; *colyum* for *column*; *champeen* for *champion*; *literachure* for *literature*; *deef*

*for deaf; childern for children; interduce for introduce;
persent for present; heerd for heard; Afirca for Africa;
are for our*

Individual Differences

In providing for individual differences of pupils, particularly where classes are small, the following suggestions may be helpful to the teacher:

1. Whenever possible, permit pupils to have some choice in the selection of subjects in both oral and written composition.
2. Limit the scope of assignments in written work to small enough units so that all written work can be carefully corrected. Corrections should be made clearly so that pupils understand them. Opportunity should be given for pupils to correct their own and each other's papers. Each pupil should be made conscious of the specific errors that he makes. Certain written work should be rewritten in the light of the corrections made. The sooner corrections are made the better.
3. Keep records of individual speech and writing errors of pupils and provide instruction and adequate drill to eliminate these errors.
4. Stimulate each pupil to attempt some form of creative expression suited to his interest and level of ability.

Correct Forms for Use in Written Composition

Other forms are acceptable and may be used. It is important that each school adopt a standard form to be used throughout the system, and that copies be on the bulletin board or in some other conspicuous place in every classroom.

Letters

1. Form for a simple note such as a first- or second-grade pupil might write:

Dear Jack,

We are sorry you are sick.

We have a new pet. It is a white rat.

John.

2. Form for a friendly letter such as an intermediate-grade pupil should write:

Route 4
Central City, Colorado
September 28, 1942

Dear Grandmother,

I had a happy birthday. It was good of you to send me the book of "Anderson's Fairy Tales". Of the four stories that I have read so far, I like best the story of "The Ugly Duckling". The pictures in the book are beautiful.

At my birthday party Mother served my favorite chocolate ice cream and a cake with ten candles on it. Before they left my friends gave me ten spansks.

Your loving granddaughter,
Betty.

3. Form for a business letter: (Fifth-grade level)

Room 304
Lincoln School
Greeley, Colorado
November 15, 1942

Office of Information
Department of Agriculture
Washington, D. C.

Dear Sirs:

My class is studying about harmful insects about the house such as cockroaches, houseflies, and ants. Please send a list of the bulletins that you have that will help us and the price of each.

Yours truly,
George Johnson.

4. Form for an address on an envelope:

George Johnson
Room 304
Lincoln School
Greeley, Colorado

Office of Information
Department of Agriculture
Washington, D. C.

5. Form for an outline: (Seventh-grade level)

How Dogs Are Used in the Far North

- I. Description of the Husky or Eskimo dog
- II. Work the dogs do
 - A. Haul things
 1. The mail
 2. Furs to market
 3. Food and other supplies to people
 4. Serums and medicines to sick persons
 - B. Haul people
 1. Travelers, traders, and prospectors
 2. Visitors from one village to another
 3. Eskimos as they hunt
 4. Doctors to sick persons
- III. Where the dogs are used most
 - A. Snow-covered regions
 - B. Places too rough for airplanes to land

6. Form for a book report suitable for filing in a box file:
(Sixth-grade level)

Bridges, William. *Big Zoo*.

This is a true story of the exciting things that happen behind the scenes in a city zoo. An interesting part tells how the men fed a baby hippopotamus whose mother refused to take care of him. The description of keepers recapturing a tribe of monkeys that escaped from monkey island is very funny. There are many photographs in the book. Other books by this same author are *Wild Animal World* and *Snake-Hunters' Holiday*. Both boys and girls will like *Big Zoo*. It is in the children's room of the City Library.

Judy Atherton.

November 3, 1942.

7. Form for a bibliography:

(1) Book

Brewton, John Edmund. Gaily We Parade. New York: The Macmillan Company, 1940.

(2) Magazine article

Patillo, Gilbert. "Abdullah's Onions." Story Parade. (January, 1942), pp. 23-31.

(3) Pamphlet or Bulletin

Garrett, Ethel Blair and Powell, Eleanor Inez. Chinese Life. Dallas, Texas: Southern Library Association, 1936.

BIBLIOGRAPHY FOR TEACHERS

Brown, Dorothy Lothrop and Butterfield, Marguerite. *The Teaching of Language in the Primary Grades*. New York: The Macmillan Company, 1941.

Treats the whole language program in grades one, two, and three. Full of suggested language activities emphasizing the creative aspects of language.

Jenkins, Frances. *Language Development in the Elementary Grades*. New York: T. Nelson and Sons, 1936.

Contains practical illustrations and suggestions for the whole language program from nursery school and kindergarten through grade eight. Contains practical illustrations and suggestions for ways of discovering and meeting special language needs of classes, measuring pupils' growth, and lesson assignments.

McKee, Paul. *Language in the Elementary School*, Revised Edition. Boston: Houghton Mifflin Company, 1939.

Comprehensive treatment of every aspect of the language program in the elementary school. Includes spelling and handwriting as well as composition.

National Education Association, Department of Elementary School Principals. *Language Arts in the Elementary School*. 20th Yearbook. Washington, D. C.: NEA, 1941.

Describes work being done in all phases of language arts.

National Education Association, Department of Superintendence.
The Nation at Work on the Public School Curriculum. 4th
Yearbook. Washington, D. C.: NEA, 1929. Chapter IX,
“Language and Composition.”

Contains excellent lists by grades of language activities
appropriate to other school subjects and activities.

National Society for the Study of Education. *Forty-second Year-
book.* Bloomington, Illinois: Public School Publishing Com-
pany, now in progress.

The yearbook will be devoted to the language arts.

THE PROGRAM IN SPELLING

WHY SPELLING SHOULD BE TAUGHT

Spelling functions in all written work and since one is severely penalized by society for misspellings, it is important for the teacher to strive to achieve the following aims:

1. To teach pupils to spell the words most commonly needed in writing
2. To develop a thorough understanding of the meaning and use of the words to be spelled
3. To develop a "spelling consciousness" to such an extent that pupils will be able to recognize the correct and incorrect spelling of words
4. To develop a "spelling conscience," which is a desire on the part of the pupils to spell correctly
5. To develop an efficient method for learning to spell a new word

HOW SPELLING MIGHT FUNCTION IN OTHER ACTIVITIES

It is most important to hold pupils to high standards of correctness in spelling in all written work that they do in connection with all school activities. Since the spelling vocabulary a given pupil will need in his writing connected with other school subjects is impossible to control, a teacher will need to guard against the chances of a pupil's misspelling words in his writing and thus learning them incorrectly. Sometimes the teacher can foresee spelling difficulties and write the words correctly on the board for pupils to copy as needed. In the primary grades, he will need to encourage pupils to ask him how to spell any words about which they are doubtful, and give them help promptly and graciously. After pupils gain skill in using the dictionary, they should be urged to look up spellings of doubtful words for themselves.

In composition, and whenever possible in social studies, science, and other subjects, a conscious effort should be made to provide opportunities for pupils to use most of the words they have had during the spelling period. Spelling words make excellent practice material for exercises in handwriting.

SUGGESTED SPELLING PROGRAM BY GRADES

GRADE ONE

Suggested Outcome for Pupils of Average Ability by the End of Grade One

No formal instruction in spelling is recommended for first grade. The spelling words that pupils need in their writing may be taught in connection with the programs in handwriting and composition. In thus teaching spelling incidentally, teachers will need to be aware of the most important spelling words for first-grade pupils to learn and see that they are presented and mastered by the pupils in their work in composition and handwriting.

Suggested Procedures and Other Aids for Teaching

Because spelling as a subject will be begun in some schools in first grade, the following suggestions for teaching it are included in this course of study. In schools where it is not taught directly in first grade, these suggestions will be applicable to teaching spelling on the second-grade level.

It is recommended that regular instruction in spelling should not be begun until the pupils have acquired a reading vocabulary of from 100 to 200 words and have some need for writing. This will probably not be before the end of the first semester.

A spelling period of ten to fifteen minutes is suggested. It seems wise not to attempt more than ten new words a week.

The words studied should be those of immediate value to the pupils in meeting their writing needs.

A text is not essential, but the right sort of spelling text or work book may be used to advantage.

Correct habits of study should be developed from the beginning of instruction.

Some teachers find that the usual methods of teaching spelling are not suited to first-grade pupils because of writing difficulties involved. The following adaptation has been used successfully:

The teacher writes the two new words on the board, using the type of writing the pupils have learned, either manuscript or cursive. Each word is pronounced and used in a sentence by the teacher. Each word is then pronounced, used in a sentence,

and spelled orally by a pupil. The first word is then written on the board, erased, and written successively by at least two pupils who spell the word aloud as they write it while the class observes them and spells it softly. All pupils write the word on paper as many times as they can while the teacher goes from desk to desk checking their work. This procedure is then followed for the second new word. Both new words are then written on paper by each pupil and handed to the teacher. Review words are studied in the same way.

GRADE TWO

Suggested Outcomes for Pupils of Average Ability by the End of Grade Two

1. A review of the most difficult words studied in the first grade
2. A mastery of about ten new words per week making a total of from 300 to 350 for the school year
3. A knowledge of correct study procedure
4. Correct use of the spelling text or work book by the pupils
5. Some practice in detecting spelling errors in spelling papers and in other written work
6. Pride in correct spelling
7. Development on the part of each pupil of the habit of keeping a record of his own "spelling demons" and of mastering them through special study

GRADE THREE

Suggested Outcomes for Pupils of Average Ability by the End of Grade Three

1. A review of the most difficult words studied in second grade
2. A mastery of about fifteen new words per week, or from 400 to 450 words for the school year
3. Increased mastery of correct procedure for learning to spell a word
4. Efficient use of a spelling text or work book
5. Increased skill in detecting and correcting spelling errors
6. Development of a spelling conscience
7. Accuracy in keeping a list of "spelling demons" and pride in getting "demons" off the list

GRADES FOUR THROUGH EIGHT

Suggested Outcomes for Pupils of Average Ability

1. A review of the most difficult words of the preceding grade
2. A mastery in each grade of about twenty new words per week, or of about 540 to 750 words for the school year
3. Mastery of correct study procedures in learning to spell a word
4. Skill in detecting and correcting spelling errors in all written work
5. Increased accuracy in keeping records of individual difficulties and pride in overcoming them
6. Elimination of guessing at the spelling of words
7. Knowledge of how to find the correct spelling of a word in the dictionary is usually taught in the work-type reading and in composition periods, but the values of the dictionary habit should be discussed during the spelling period.

EVALUATING THE PUPIL'S WORK

Standard tests and scales are of little or no value in spelling unless the tests contain only the words which have been taught to a class. It is recommended that teachers test pupils' progress in spelling in the following ways:

1. Construct individual and class graphs, showing weekly progress in mastery of spelling words.
2. Give frequent written reviews followed by informal tests.
3. Give yearly, semi-yearly, or quarterly tests made up of a sampling of from about fifty to one hundred words selected from the list of words taught.
4. Check the spelling of words used in all of the pupils' written work.

SUGGESTED ADAPTATIONS FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

For the spelling period pupils may be grouped somewhat as follows:

First grade work alone. Second and third grades work together. Fourth, fifth, and sixth grades work together. Seventh and eighth grades work together.

Pupils may be grouped on the basis of their present level of achievement in spelling as shown by sampling pre-tests, and assigned words from the grade list which is in keeping with their achievement. Pre-tests can be made by picking at random fifty words from the semester's list. If a child misses a large number, he should have words from a lower grade.

If a text or work book is used, all spelling classes may be held at once with a pupil in each group pronouncing the words to his group. The teacher can then devote her attention to each of the various groups in turn as needed.

SPECIAL HELPS IN TEACHING SPELLING

The Selection of a Spelling Vocabulary

The words taught in spelling should be only those words which are used most frequently and universally in the writing activities of life. Only word lists selected in accordance with recent investigations should be used. A textbook based upon such a word list is far superior to any list the teacher might make from day to day. Inquiry should be made into how the vocabulary was chosen before a text or a work book in spelling is selected. In fact, the value of a textbook or work book in spelling depends more upon the real worth of its vocabulary than upon any other one factor.

A Graded Spelling List

This spelling list has been copied from the South Dakota Language Arts Course of Study, 1932, pages 610 to 635. The following explanation quoted from the course states how the committee on spelling selected and graded the list, and gives their recommendations concerning its use.

South Dakota Language Arts Course of Study
Pages 610-635

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South Dakota.

"The first five thousand words most commonly used in adult writing were selected as a basic vocabulary, from Dr. Horn's list* of the 10,000 most commonly used words. Words which obvi-

*Horn, Ernest. 10,000 Words Most Commonly Used in Spelling. *Iowa Monograph in Education*, No. 4, College of Education, State University of Iowa, Iowa City, Iowa. 1926.

ously had no spelling difficulty and a few of those words, the spelling of which would be learned incidentally, were omitted. As far as possible the words having the greatest frequency of occurrence were placed in the lower grades and tentative grade lists were made. The words were further classified in grades according to the opinions of teachers who were teaching in these respective grades. Various members of the committee asked teachers in their respective school systems to place the words in the grades in which they thought they should be according to both child usage and occurrence in readers. The committee next compared the grade placement of the words with that found in the Kansas City Course of Study. As a result of this procedure, the committee submits the following word lists which may be used in the various grades. There are a number of excellent spelling texts on the market; thousands of dollars and years of time have been spent in selecting the vocabularies for some of these texts. Since it is not possible for this committee to select a vocabulary in the scientific manner in which the vocabularies were selected for these texts, we strongly recommend the use of some standard text. A text in the hands of each pupil is advisable, since it is an aid to the pupils and a means of conserving time and energy for the teacher. If good textbooks cannot be purchased, it is recommended that the enclosed word lists be used, since they are likely to be more nearly the words we need to know how to spell, than are the words that might be selected at random by the teachers."

GRADE ONE 150 Words

Lesson 1	Lesson 2	Lesson 3	Lesson 4
bird	all	am	and
big	pen	bed	ball
can	red	blue	came
cat	an	boy	chair
I	at	for	do
is	no	man	dog
me	doll	six	eat
run	girl	on	so
see	the	my	top
sun	in	has	roll

Lesson 5	Lesson 6	Lesson 7	Lesson 8
are	who	fox	desk
as	you	car	find
away	was	clock	did
father	bad	moon	fish
egg	barn	sat	good
hen	fat	saw	may
sit	come	this	said
ten	not	like	will
had	one	books	we
go	it	corn	up

Lesson 9	Lesson 10	Lesson 11	Lesson 12
what	milk	door	stand
tree	old	down	from
fly	house	five	black
pig	jump	four	sister
him	woman	table	two
flag	ran	school	with
hat	play	there	yes
have	snow	mother	star
he	they	of	swim
some	cow	his	say

Lesson 13	Lesson 14	Lesson 15
there	now	read
to	green	ride
hot	mud	sheep
of	little	your
pretty	cup	brother
yellow	four	look
gun	that	three
toy	into	horse
her	room	nine
walk	cap	funny

GRADE TWO 290 Words

Lesson 1	Lesson 2	Lesson 3	Lesson 4
apple	about	farm	above
back	beg	dinner	arm
face	know	draw	lay
very	candy	children	hanging
grade	day	dear	happy
name	inside	flower	bears
rug	if	dig	cup
too	fall	got	fun
pencil	fine	lip	get
bit	glad	pin	ill
.			
Lesson 5	Lesson 6	Lesson 7	Lesson 8
hay	under	act	hair
hot	left	after	afraid
paper	us	afternoon	cake
mat	right	clean	its
water	them	hands	home
mouth	nor	book	fix
leg	less	bell	led
nap	pie	buy	rain
new	sad	eight	plant
fit	late	dad	Friday
.			
Lesson 9	Lesson 10	Lesson 11	Lesson 12
care	race	add	again
help	use	cold	fur
how	way	fill	kid
kiss	night	inch	hike
here	over	kind	build
lazy	told	kinds	best
fed	try	fruit	going
coat	men	cry	keep
dogs	line	pan	last
grow	shop	papa	end

Lesson 13	Lesson 14	Lesson 15	Lesson 16
age	air	ask	dirty
upon	apples	Christmas	ate
teeth	bee	hats	bake
sell	sing	hear	I'll
pine	gave	friend	hang
nut	head	eggs	brothers
made	cap	kids	color
mill	canoe	land	cans
full	days	eye	bank
cast	fast	took	tail

Lesson 17	Lesson 18	Lesson 19	Lesson 20
chickens	poor	time	band
bag	much	rest	cent
hill	swing	till	ever
bread	mate	plant	chairs
doing	long	park	cream
drop	noon	our	food
end	out	pa	here
floor	set	seven	unkind
near	Mr.	thank	lands
make	side	cut	gun

Lesson 21	Lesson 22	Lesson 23	Lesson 24
ha	chat	take	child
got	be	ring	games
auto	gold	note	fell
bags	girls	many	faces
dance	far	ice	bill
dine	bring	grant	blew
game	gang	gets	doors
tells	show	fits	falls
send	sets	eyes	leaf
pile	tale	drink	bus

Lesson 25	Lesson 26	Lesson 27	Lesson 28
behind	news	colors	past
boys	never	ends	pay
fire	mine	finds	pick
call	love	gladness	lime
feed	feet	count	lips
drinking	clouds	cups	May
dishes	coats	calls	meat
let	heard	Miss	pal
sleep	hard	liked	side
part	ending	party	pulled

Lesson 29

puts
salt
sand
seem
sent
names
must
Mrs.
lift
meal

GRADE THREE 480 Words

Lesson 1	Lesson 2	Lesson 3	Lesson 4
able	across	adding	afternoon
buried	busy	something	button
dropped	dust	dwelt	earth
still	gray	smaller	having
called	bare	tore	sleepy
third	dance	camp	dare
half	falling	pound	February
basket	gate	harm	tonight
fair	handkerchief	danger	invite
daddy	smile	gather	joy
I'm	jelly	thankful	until
large	kick	jolly	kitchen
garden	calling	threw	iron
keeping	earn	kill	island
key	kills	once	twelve

Lesson 5	Lesson 6	Lesson 7	Lesson 8
ahead	alike	alive	borrow
cannot	careful	cards	careless
east	easy	eating	grandfather
grew	heavy	turkey	high
these	dead	helped	south
because	ground	herself	dishes
truth	tomorrow	December	tongue
isn't	it's	dress	sight
stamps	I've	mountain	doesn't
gets	pray	good-bye	thread
knee	just	slowly	done
gives	knew	grades	dozen
knife	giving	eleven	glass
die	God	died	born
June	goes	knock	before

Lesson 9	Lesson 10	Lesson 11	Lesson 12
begin	allow	almost	alone
cares	Tuesday	chickens	nobody
catch	enjoy	breakfast	already
knows	evening	houses	visit
nail	map	church	cloth
mad	ocean	bright	singing
obey	clock	clear	quick
sweet	pack	Thanksgiving	coal
listen	page	rent	lose
belong	lace	few	coming
caught	beside	loves	cooking
cents	every	fight	between
brave	first	laid	quiet
says	matter	mama	fishing
shoes	rooms	weak	leave

Lesson 13

rained
always
oil
animal
flour
could
rode
shell
cross
mail
blew
piece
market
store
off

Lesson 14

body
both
himself
answer
fur
asking
lead
spell
work
know
bought
running
letter
change
hope

Lesson 15

cough
flying
hundred
wait
pass
front
built
another
holding
rich
such
honest
bread
horses
loud

Lesson 16

break
children's
part
city
word
around
bunch
choose
hug
forgot
merry
hurt
filling
lady
Wednesday

Lesson 17

January
nearly
quarter
quart
cover
empty
upstairs
loved
village
laugh
pages
needed
queen
ribbon
stone

Lesson 18

laws
wall
seed
asleep
flies
leaves
boy's
strange
begun
longer
next
paying
nickel
weather
war

Lesson 19

November
comes
lot
looking
hour
passing
field
used
mix
ninth
along
noise
strong
o'clock
quite

Lesson 20

nothing
yards
close
looked
everybody
stood
board
likes
climb
voice
forgive
waiting
learn
notes
felt

Lesson 21	Lesson 22	Lesson 23	Lesson 24
makes	wife	cousin	study
birthday	blowing	explain	shady
finger	sure	times	wished
making	marked	roof	March
match	hungry	watch	teacher
excuse	papers	finish	their
north	freeze	nights	broke
October	lot	tables	working
boat	breath	lake	people
often	nice	rights	Sunday
radio	queer	summer	mean
angel	were	west	begins
also	hole	holiday	wear
reading	well	none	takes
road	shows	struck	world

Lesson 25	Lesson 26	Lesson 27	Lesson 28
sin	town	ours	written
night	write	wrong	mind
mile	own	throw	September
ugly	minutes	young	sewing
block	lunch	Monday	does
place	yet	yesterday	money
skin	mouth	number	middle
round	planted	while	early
bottom	smoke	save	July
Saturday	plays	wheel	price
which	please	proud	sending
else	true	seen	push
taking	sea	leather	older
talk	open	second	kindness

Lesson 29	Lesson 30	Lesson 31	Lesson 32
only	beauty	thinking	Thursday
other	slip	each	warm
seat	grand	dollar	today
writing	great	those	doctor
outside	inches	farmer	start
minutes	plate	through	grandmother
gone	fence	butter	friend
myself	wood	sore	getting
teach	heart	didn't	beautiful
women	they	spent	miles
telling	pictures	shall	help
ink	uncle	stairs	poem
size	thin	April	truck
rough	think	days	trip

GRADE FOUR 640 Words

Lesson 1	Lesson 2	Lesson 3	Lesson 4
hasn't	date	friends	dates
fresh	loss	twenty-four	barrel
darn	kept	banker	loving
changes	cheap	boxes	acre
twenty-five	bound	accept	healthy
northern	understand	killed	kingdom
losing	lets	lovely	everything
keeps	abuse	united	useful
bottle	keys	nose	fry
haste	cheer	haven't	death
twice	haul	frozen	brain
badly	bow	everyday	chief
friendly	frost	chicks	Oct.
eve	evenings	boys	kisses
abroad	chest	dearest	uses
ranch	unhappy	unless	chocolate
equal	dawn	numbers	office
absent	northwest	basement	knees
hats	kicked	ache	chose
even	chicken	oats	lower

Lesson 5	Lesson 6	Lesson 7	Lesson 8
lovingly	acting	circus	lack
acres	basketball	battle	brass
chosen	hearts	bay	afford
using	Dec.	hello	orange
old	brains	furniture	bean
lowest	heat	export	ladies
knit	usually	opened	helpful
heap	furnace	depot	factory
ft.	expect	lucky	gallon
everywhere	dentist	classes	orchard
churches	branch	beach	afternoons
acted	addition	visited	order
knocked	valley	lumber	cleared
circle	one-half	advise	breaks
bat	luck	cleaned	afterward
fuel	known	breaking	garage
excuses	cities	lump	bride
deed	brand	gain	faithful
bathing	violin	desert	divide
added	address	fail	helps
Lesson 9	Lesson 10	Lesson 11	Lesson 12
branches	helping	lame	walking
opens	failed	bedroom	others
bears	dinners	garbage	aid
games	clerk	voyage	madam
difference	beaten	higher	lamps
brick	organ	wasn't	hog
clever	lying	aim	A. M.
visitor	becomes	owned	fare
higher	against	closet	packed
ages	fallen	blank	bless
divided	walked	magic	gathered
bridge	closed	broad	cloudy
wanted	owe	package	broken
began	lamp	gas	American
oven	clothing	dollars	being
alas	beginning	although	don't
begged	hit	landed	mailed
machine	landscape	owner	doz.
closes	clouds	doctors	believe
bringing	allowed	family	pair

Lesson 13

brought
main
gay
Dr.
farewell
paint
larger
club
among
hogs
believed
farmers
gem
maple
lately
Co.
bud
amuse
painted
buildings

Lesson 17

dressed
path
marking
lbs.
daily
awake
cement
hoped
fields
drill
average
cellar
peace
master
peaches
leads
maybe
curtain
hotel
fifteen

Lesson 14

brush
holds
maps
coach
laughed
farther
belonged
drawing
painter
coarse
goldfish
laughing
burned
coast
gentle
angry
holidays
darling
bother
gentleman

Lesson 18

gentlemen
Feb.
chance
overcoat
drew
born
globe
pays
leader
cuts
hoping
avenue
fierce
drive
leading
prison
peas
mayor
Ave.
lean

Lesson 15

believes
later
building
farming
belongs
March
holes
fear
parade
march
backward
darkness
borrow
gift
dances
awhile
feeling
pasture
mark
laying

Lesson 19

marks
bore
gloomy
drunk
border
fifth
cure
automobile
golden
boats
dry
meals
cruel
learned
perhaps
meaning
dull
crowd
animals
hours

Lesson 16

burning
dream
lawn
changed
holy
geography
chances
homes
babies
dresses
awful
honey
feels
dairy
coffee
honor
give
burnt
fellow
glasses

Lesson 20

drove
gloves
penny
booklets
auto
ceiling
least
good night
dumb
fifty
aunt
meant
August
crops
however
blame
medicine
huge
measure
cedar

Lesson 21	Lesson 22	Lesson 23	Lesson 24
booklet	memory	poorly	grave
meeting	burst	hurried	letters
goods	human	largely	glad
collar	figure	finding	asked
fighting	leaving	picnic	hurry
below	hung	cousins	cattle
gown	Aug.	midnight	journey
mend	grain	greater	greatest
bones	cease	pillow	couldn't
filled	hunt	country	grind
duty	legs	flesh	floors
creek	common	earlier	ears
belt	message	husband	copies
bushel	keen	artist	purple
period	hunting	counted	follow
jumped	business	I'd	mighty
covered	grandma	greet	cotton
lend	dying	earned	protest
asks	piano	flowers	idea
cause	boards	arrive	grocery
Lesson 25	Lesson 26	Lesson 27	Lesson 28
engine	harvest	lies	follows
joke	French	blown	cases
cottage	easily	light	football
thought	followed	mixed	buttons
neck	question	cord	eats
loan	million	paid	invited
army	aren't	illness	grows
trying	job	eastern	forenoon
handy	harder	feels	lived
lie	frames	rye	saying
grounds	envelope	moment	Bible
mine	railroad	anyway	months
apron	cash	corner	buying
blow	linen	growing	edge
liked	follows	list	ironing
costs	lines	blow	guard
receive	rubber	handsome	lively
idle	missed	imagine	cars
group	copy	forest	eighteen
Easter	anywhere	mornings	blooming

Lesson 29	Lesson 30	Lesson 31	Lesson 32
ivory	case	thousand	truly
guessed	jail	neat	walnut
eighth	forever	anyone	fortune
lives	bid	cane	jaw
ankle	guide	nerves	capital
forget	eighty	trunk	bigger
cabin	seventeen	elbow	need
Jan.	living	hall	answers
motor	bids	cape	bills
carrying	moved	biggest	enemy
load	jar	ended	twenty
seventy	soldier	newspaper	longest
habits	bloom	forty	blocks
either	thirteen	handle	looks
named	nature	birds	bitter
loaded	calendar	anybody	enough
carry	answered	carriage	cared
sunshine	township	forward	niece
nation	calf	birth	blizzard
lock	navy	blood	loose

GRADE FIVE 640 Words

Lesson 1	Lesson 2	Lesson 3	Lesson 4
surprised	canvass	wires	interest
wired	countries	presented	courts
moving	temper	couple	frame
power	wisdom	without	earnest
returning	nations	admit	cashed
eager	rolls	earliest	advise
intend	prepare	carload	caused
review	addressed	forwarded	newspapers
forms	captain	intending	easier
absence	county	adopt	press
canned	natural	course	sample
corrected	present	tough	towards
sweetheart	ruined	witness	women's
musical	tender	neighbor	friendship
riding	withdraw	president	garment
prayers	nearer	sake	itself
action	rushing	covering	freight
counties	admire	advance	jealous
values	carefully	inviting	together
capable	thirty	cashier	wonder

Lesson 5	Lesson 6	Lesson 7	Lesson 8
covers	causes	crowded	customer
advised	wonderful	traveling	tried
nicest	notion	workers	worried
ton	judge	nurse	problems
crazy	gladly	printing	self
wondered	elevator	secret	towards
title	agency	enclose	treasure
notice	central	problem	serve
pretend	training	grading	produce
samples	wondering	jury	promises
efforts	credit	section	trust
future	numbered	kindly	worrying
join	won't	greatly	unable
affair	primary	endure	worship
ceased	scarce	agreed	offered
toward	employ	certain	profit
prevent	golf	worries	settled
creature	junior	curtains	allowance
saving	agent	chamber	changing
elected	century	usual	damage
Lesson 9	Lesson 10	Lesson 11	Lesson 12
trusting	landing	opinion	promised
worse	guessing	happened	orders
officer	enjoyed	enjoyment	entire
product	altogether	language	lawyer
settle	chapter	entering	happening
enemies	dated	ambition	proof
growth	understood	largest	usual
knowing	promise	charge	otherwise
all right	worth	unlike	learning
channel	opening	daughter	dealers
dangerous	sew	would	proper
worst	shape	prompt	ancient
understanding	useless	sharp	charges
omit	overlook	hardly	error
program	share	learning	hate
several	hardest	deal	answering
engineer	amount	writer	lecture
guest	charged	hasten	ourselves
labor	envy	debt	protect
happen	shipped	charming	shortly

Lesson 13	Lesson 14	Lesson 15	Lesson 16
wouldn't	writers	check	exercise
events	heading	appeal	health
happens	evidence	lighted	delay
lengths	defeat	delay	vacant
level	apart	example	wrote
anxious	adventure	velvet	prove
exact	outline	checked	shoulder
cheaper	limit	heaven	contain
deducted	appears	lining	cheerful
liking	hearing	demand	choir
decide	delight	appetite	visiting
appear	childish	citizen	deliver
values	describe	public	yearly
civil	depend	provided	sign
apply	owners	local	heavens
proved	packages	helpless	located
shown	parents	expense	expensive
exist	highly	history	appoint
hire	liberty	expenses	deserve
locate	provide	claim	approve
Lesson 17	Lesson 18	Lesson 19	Lesson 20
cleaning	approved	years	parlor
desire	voted	object	locating
arise	signed	public	yield
silent	expert	holder	honesty
arrange	clerks	lonely	explained
closer	destroy	climate	arranged
extended	hopeful	horror	clearly
arrived	lonesome	ashamed	longing
destroyed	assist	clubs	develop
visitors	yourself	silver	questions
youngest	pupils	simple	passed
partner	single	loyal	hundreds
wages	extent	extra	collect
quotations	hospital	assure	machinery
lover	different	attack	imagined
devil	maiden	college	manner
extreme	ideas	factories	failing
ideal	factor	ignorant	youngster
difficult	manage	pastor	occur
machines	immense	quietly	railroads

Lesson 21	Lesson 22	Lesson 23	Lesson 24
pause	sixth	yourselves	peach
railway	waist	wanting	rather
sizes	periods	rapidly	skirt
washing	you've	skating	warehouse
youth	permit	perfect	waste
manufacture	rate	raw	direction
improving	slaves	faint	reaches
false	marry	sleeves	phoned
improved	include	happening	wedding
column	famous	improve	measures
attended	masters	familiar	slippers
wasted	attempt	direct	favor
you'll	dining	comfort	indeed
phone	watching	wealth	disappoint
real	fault	meantime	commands
soldiers	matters	avoided	authors
fashion	commence	weeks	members
income	reason	discover	somewhat
except	discount	pictures	received
increase	sometimes	companies	pieces
Lesson 25	Lesson 26	Lesson 27	Lesson 28
feeble	balance	weighed	square
industry	disgrace	players	concert
mention	compel	reduce	believing
sorrow	midst	speak	regards
recent	space	problems	plus
pipe	recover	insist	whatever
figured	plainly	files	besides
initial	barely	pleased	dividend
awkward	dislike	complete	stations
compare	complain	become	missing
discuss	special	welcome	inspect
merchant	refused	plenty	whatsoever
injury	pleasure	regard	poems
sort	weighing	western	steel
record	barrels	slates	remark
places	minds	begging	blanks
weigh	weight	final	condition
awfully	mischief	distant	division
inquire	dispute	remain	modest
messages	concern	poets	install

Lesson 29	Lesson 30	Lesson 31	Lesson 32
finished	stocks	monthly	foolish
polite	repeat	following	instead
remember	folks	stomach	force
portion	studied	remove	porch
mostly	reply	connect	resting
stuff	conduct	sugar	duties
instance	forgotten	drawn	whistle
double	bluff	postage	correct
motion	doubt	contents	obtain
subject	report	buyer	furnish
possible	whereby	dread	engage
brief	consider	wherever	youngsters
result	insure	potatoes	power
otherwise	shown	continue	natural
suggests	willing	driving	visited
bureau	movie	calm	midst
wherein	supply	drug	really
constant	businesses	during	orders
instruct	mountains	cancel	suppose
offered	return	straighten	pressure

GRADE SIX 640 Words

Lesson 1	Lesson 2	Lesson 3	Lesson 4
seldom	demands	frightened	fund
ability	sense	ordered	introduce
confess	tax	quantity	orderly
delivery	envelopes	acts	quoted
supposed	frequently	boss	temperature
entirely	interested	connected	established
freedom	opposite	depends	oversight
intended	qualities	separately	quoting
offer	account	telegraph	burden
purpose	confident	fully	considered
select	deny	internally	design
suspect	sensible	ordering	services
entrance	telegram	quarrel	term
frequent	accounting	addresses	estate
intention	bookkeeping	Bros.	funeral
omitted	confused	connection	investment
quality	department	deposit	owing
according	separate	serious	rarely
bond	ere	telephone	adjust
confidence	equally	escape	cabinet

Lesson 5	Lesson 6	Lesson 7	Lesson 8
settlement	campaign	consult	receiving
severe	constantly	detail	simply
terrible	desperate	signatures	transportation
etc.	ship	traffic	examine
furnish	theater	evil	general
issues	shipments	future	knowledge
pardon	everyone	judges	payable
rates	jade	patron	recently
admitted	patience	recall	sincerely
cable	reasonable	advertise	treasurer
consist	shipping	carbon	exceed
desires	therefor	contest	generous
benefit	total	contained	laboring
terribly	evidently	detailed	reception
event	further	silence	affairs
furnished	journal	transfer	carnival
issuing	patient	exactly	continent
particular	reasons	gasoline	determine
really	advanced	judgment	slight
adopted	canning	pattern	treat
Lesson 9	Lesson 10	Lesson 11	Lesson 12
society	trial	spare	correctly
treatment	agreement	type	discharge
agents	celebrate	uncertain	appearance
catalogue	differ	speech	charm
continued	contrary	announce	correspond
diameter	centuries	certificate	discussion
agreeable	amounts	convince	discovered
caution	amusement	directed	gradually
contract	certainly	apartment	listening
diamond	diploma	character	percentage
exception	excitement	corners	regarding
genuine	gotten	director	standard
label	control	expected	unfortunately
payment	license	governor	appeared
recognize	reduced	likely	checking
peculiar	refund	per cent	costume
library	per	splendid	disease
glorious	lightening	unfortunate	expenses
exchange	government	charging	graduating
source	exhibit	correction	listing

Lesson 13	Lesson 14	Lesson 15	Lesson 16
perfectly	gross	circular	value
English	loyalty	fact	points
state	physician	handling	remind
union	relation	manufacturing	mere
applied	extremely	plan	faith
chiefly	habit	remedy	repair
counter	gymnasium	plane	population
display	luncheon	married	arithmetic
expressing	managed	happily	citizens
grammar	placing	failure	heartily
location	religion	happiness	distinct
perform	statement	remembered	courtesy
regret	unpaid	pleasant	faithfully
stated	approach	material	height
unnecessary	chorus	steadily	merit
applies	stating	upper	positive
choice	courage	vacancy	hereafter
coupon	unpleasant	headache	replace
dispose	distance	storage	merely
extreme	courses	medium	possible
Lesson 17	Lesson 18	Lesson 19	Lesson 20
position	required	wretched	creatures
method	stupid	succeed	art
hereto	worry	favorite	claims
fancy	style	honestly	cleaning
straight	favorable	model	credits
venture	worthy	practice	respectfully
fatal	hired	respect	preacher
herewith	mistake	arriving	national
strength	powder	civilized	horrible
military	reserve	covering	feature
post	avored	distinctly	success
replying	require	distribute	suppose
weekly	hitherto	create	assembly
strike	mistaken	claimed	clearing
request	powerful	article	document
fate	resident	district	athletic
highest	subjects	favors	federal
students	wounded	movement	crepe
minister	you're	honor	suggest
wholesale	submit	praise	crew

Lesson 21	Lesson 22	Lesson 23	Lesson 24
attach	reverse	curious	cutting
clipping	supplied	satisfied	dreadful
domestic	river	preparing	firm
ideals	figures	nevertheless	infer
districts	impressed	increasing	nonsense
necessary	neighbors	filing	private
precious	preparation	attendance	scene
results	route	collected	attorney
prefer	attend	satisfy	collection
neglect	closely	presently	dealer
image	deposits	nicely	dreamed
returned	file	finals	foreign
fever	C. O. D.	indicating	informed
suggestion	doubtful	nineteen	normal
fewer	crime	pressure	production
importance	included	savings	scheme
suitable	neither	draft	author
neighborhood	prepared	custom	colored
prepaid	delayed	attention	dealings
supplies	doubts	collecting	driving
Lesson 25	Lesson 26	Lesson 27	Lesson 28
former	numerous	sections	companion
informing	property	ballot	defend
noticed	seconded	communicate	elsewhere
progress	aware	declare	employment
search	command	effective	defense
await	decent	foundation	company
columns	education	instant	base
debate	forwarding	occupied	beautifully
due	inspection	protection	completed
forth	oblige	secure	definite
inquiring	properly	banking	enclosed
notify	secretary	community	becoming
promptly	background	decline	composed
season	commerce	electric	degree
awaiting	decided	frank	encourage
comfortable	effect	instructed	provision
debts	fought	occur	beheld
ease	insured	providing	composition
fortunate	obtained	secured	delayed
insisted	proportion	banquet	endorsed

Lesson 29	Lesson 30	Lesson 31	Lesson 32
delegates	believe	c������	waist
energy	business	loan	profitable
security	receives	compliments	salesman
belief	courses	ceilings	marriage
concerns	agencies	believed	sketch
delicate	vulgar	laundry	miserable
engagement	especially	preface	radio
delicious	restaurant	trimmed	industrial
belonging	military	gloomy	manager
concrete	receipt	desert	company's
delighted	cancellation	dividend	repaired
English	obedient	mothers	suggestions
benefit	attached	enemies	promptness
condition	principle	awfully	includes
enrollment	refrigerator	easier	addressing
delightful	bobbed	eighteenth	based
beyond	mood	managers	obliged
conducted	fourteenth	outlined	plans
delivered	forwarding	requesting	insurance
entertain	instructed	agriculture	truly

GRADE SEVEN 640 Words

Lesson 1	Lesson 2	Lesson 3	Lesson 4
item	agrees	ranch	folly
faults	planned	lease	refer
defect	advising	possess	sufficient
patent	adopted	process	additional
battery	persuade	palace	scarcely
support	committed	source	anniversary
hesitate	accordance	namely	universal
developed	circumstances	pledged	prevailing
needless	decision	occupy	referred
competition	consequence	territory	consistent
possibility	influence	organize	previously
premium	discussed	township	objection
estimate	resolution	recorded	appearing
sanitary	acceptable	justified	doubtless
radiator	declaration	signature	stationary
illustrate	compromise	poultry	requirements
distribution	situation	locality	resignation
parcel post	conclusion	residence	accommodate
insurance	arrangement	vicinity	recommendation
artificial	opportunities	authorized	represent

Lesson 5	Lesson 6	Lesson 7	Lesson 8
latter	kindred	parcel	proceed
prior	hadn't	error	remote
hence	gallons	retain	removal
readily	major	transit	apology
hereby	inasmuch	comparison	economy
annual	gingham	profitable	exhausted
formerly	genius	contact	securing
fortnight	favorably	resigned	liberal
infinite	elements	purchase	offense
primarily	laundry	damaged	pertaining
original	interior	estimates	honorably
heretofore	garments	passenger	absolutely
popular	housekeeping	possession	extending
abstract	intelligence	respective	attaching
continually	invitation	transferred	appreciated
practically	experiment	destination	acknowledging
postponed	medical	defective	operation
finally	daughters	difficulty	accordingly
honorable	generations	available	described
immediately	countenance	arrangements	accustomed
Lesson 9	Lesson 10	Lesson 11	Lesson 12
social	advises	objects	enable
supreme	duly	tempted	produces
officers	effects	declined	adequate
personal	permits	decidedly	refrain
honored	confined	compound	complied
superior	escaped	advisable	consisted
approval	involve	continues	allowing
obedient	inferior	essential	limited
prominent	evident	previous	scandal
competent	apparently	explanation	replied
balanced	instances	completion	reputation
prosperous	attitude	preferred	negative
moderate	assured	interrupted	concerned
perfection	selection	regretting	occasion
assurance	fortunately	thoroughly	complaints
considerable	considerably	definitely	mentioned
efficient	neglected	accompanied	connecting
approximate	extension	particularly	personally
acquaintance	tendency	complaint	consequently
acknowledge	acknowledgment	extraordinary	publication

Lesson 13

amused
offended
dignity
sincere
nervous
amiable
solemn
passion
courteous
affection
contented
miserable
sympathy
gratitude
mysterious
indifferent
disposition
impatient
appreciation
misunderstanding

Lesson 14

affect
comply
attain
realize
impress
gorgeous
probably
apparent
disposing
amendment
compelled
minimum
attraction
concerning
exceptionally
inconvenience
exceedingly
complaining
convenient
combined

Lesson 15

canceled
relative
admired
maintain
reality
occurred
executed
attractive
independent
suggesting
originally
discussing
attempting
specified
assistance
disappointed
efficient
desirous
remains
obtaining

Lesson 16

relief
welfare
grippe
behalf
poverty
relieve
assume
presented
exercised
institute
benefits
associate
physical
principal
responsible
superintendent
individual
advantages
assistant
associates

Lesson 17

executive
court
data
reform
justice
adjourned
counsel
liable
legal
guilty
mortgage
testimony
notation
conference
punishment
adjustment
accrued
adjourned
memorandum
investigation

Lesson 18

bases
angle
astray
propose
survey
surface
operate
cylinder
impossible
electrical
improvement
directions
installed
internal
northwestern
external
construction
activities
gratifying
affectionate

Lesson 19

reliable
absurd
vague
triumph
mutual
strangely
ordinary
unusual
attachment
disgusted
partial
ordinarily
desirable
assuring
uncomfortable
commonplaces
brilliant
outstanding
excellent
naturally

Lesson 20

retail
profits
budget
billed
catalogues
debtor
overdue
deduct
overcharge
corporation
employees
merchants
collections
commercial
purchases
adjusting
transaction
stationery
attachment
customer's

Lesson 21	Lesson 22	Lesson 23	Lesson 24
tariff	staff	conform	salary
policy	campus	consent	bonus
senate	senior	induce	solicit
session	science	confer	regular
senator	faculty	proposal	prospect
congress	semester	presume	register
council	graduate	opposed	selected
election	athletics	interfere	officials
majority	geometry	totally	cooperate
authority	graduation	assumed	applicant
platform	assignment	ascertain	guarantee
convention	fraternity	undecided	ownership
code	examinations	regarded	references
revolution	instructing	acceptance	encouraging
republican	initiation	planning	advertising
legislature	university	consideration	association
prevention	educational	arranging	opportunity
representative	kindergarten	represents	organization
preliminary	professor	arguments	management
international	administration	recommended	accommodation
Lesson 25	Lesson 26	Lesson 27	Lesson 28
soul	execute	role	fee
spirit	related	fame	debit
bishop	compared	career	inst.
extend	compiled	opera	receipt
sacred	similar	movies	credited
created	interests	tragedy	fixtures
grateful	increased	devoted	presence
mortal	regularly	leisure	itemized
ministers	certified	indulge	finance
eternal	necessity	enjoying	surplus
petition	inclusive	endeavor	figuring
received	guaranteed	produced	shortage
prejudice	successful	league	purchasing
mission	exchanged	occupation	remittance
compliance	throughout	recollection	inventory
appointed	satisfactory	orchestra	established
marriage	approximately	exhibition	merchandise
conscious	recommend	photographs	liability
Christian	obligation	expression	invoices
missionary	accurate	occasionally	stenographer

Lesson 29	Lesson 30	Lesson 31	Lesson 32
prose	formal	confine	avail
poetry	publish	issued	edition
series	inquiry	observe	actions
margin	expired	render	arrival
issue	dispatch	indicate	politics
phrase	features	heavier	revenue
bearing	entitled	actually	process
accepted	informal	privilege	remit
acquired	durable	improving	promising
publisher	impression	attached	referring
circulars	duplicate	generally	especially
comment	indicated	including	inclining
literary	inability	pleasing	experienced
magazine	circulation	annoyance	efficiency
interview	subscription	anxiously	positions
supplement	illustrating	affectionately	prospects
pamphlet	descriptive	congratulate	emergency
quotations	regulation	appreciate	amusing
paragraph	correspondent	straightened	conceive
advertisement	intercourse	encourage	instrument

GRADE EIGHT 640 Words

Lesson 1	Lesson 2	Lesson 3	Lesson 4
colleges	verses	fees	overture
algebra	scenes	drafts	divine
alumni	fiction	customs	epistle
dormitory	lectures	republic	humble
sorority	literature	warrant	patron
ignorance	magazines	treasury	vision
chemistry	renewals	confirm	economic
investigate	romantic	utterly	financial
intelligent	definition	historical	perpetual
intellectual	description	candidate	associated
profession	publishers	certificate	sacrifice
psychology	entertaining	commissioner	sincerity
philosophy	enthusiasm	committee	reverence
translation	expressions	democracy	wholesome
mathematics	correspondence	cooperation	temptation
engineering	pamphlets	legislation	inspiration
economics	publications	documents	religious
vocational	typewriter	constitution	reflections
delinquent	criticisms	headquarters	institutions
institution	questionnaire	negotiations	instruction

Lesson 5	Lesson 6	Lesson 7	Lesson 8
auditor	client	stage	resort
invoices	annum	ceased	cement
voucher	project	specific	thermometer
creditors	officers	drama	telephoned
jobbers	resources	accompany	supervision
statistics	additions	admission	restaurant
reserved	amounted	financially	audience
crediting	amusing	pneumonia	rheumatism
valuation	patronage	characters	laboratory
industrial	operations	instructor	household
employees	replacement	auditorium	melancholy
indebtedness	recognition	performance	humanity
incorporated	respectively	appreciating	conversation
stockholders	accident	chautauqua	entertained
advertised	consigned	entertainment	communications
consolidated	cancellation	dramatic	completion
specifications	organizations	romance	bungalow
bankruptcy	accompany	professional	hardware
establishment	affidavit	announcement	accidents
manufacturer	acquire	communication	agriculture
Lesson 9	Lesson 10	Lesson 11	Lesson 12
items	pieces	Pres.	entry
invoiced	ninety	chapel	salaries
operated	receipts	manual	policies
element	utilized	vacation	notified
finances	variety	volumes	issuing
nineteen	maturity	ambitious	adjusted
deposited	respective	constructed	indicating
landlady	requested	scientific	maximum
mechanical	principles	literally	expiration
obligations	organized	graduated	registration
deduction	quantities	profound	application
fifteenth	prospective	conception	endorsement
facilities	registered	technical	corresponding
examined	installation	resolutions	economical
federation	satisfaction	scholarship	discounted
measurements	progressive	tournament	agricultural
establishing	specifically	civilization	confirmed
expenditure	accomplish	classification	appointment
installment	representatives	distinguished	commission
investigated	recommendations	acknowledged	development

Lesson 13

label
excess
imitate
liquor
briefly
temporary
additions
involved
practical
applying
installing
materially
important
opposition
regulations
remittances
monument
controversy
discontinue
essay

Lesson 17

jade
deem
infer
urgent
cordial
mainly
locally
perceive
governed
procured
moreover
explains
destruction
expectations
commission
customary
presentation
imagination
instruments
client

Lesson 14

coupe
enforce
carrier
release
absolute
qualified
incident
contains
capacity
incidentally
exclusive
inquired
omission
illustrated
substantial
demonstration
reference
accomplish
galvanizing
fundamental

Lesson 18

phase
vulgar
revenge
observed
mystery
motives
thrilled
intimate
sentiments
strenuous
thereafter
unusually
memories
creditors
personality
wonderfully
illustration
heavily
confusion
commissioner

Lesson 15

via
vary
refers
mature
reckon
intends
intervals
revised
specify
solution
differences
procure
probable
information
unanimous
examination
unsatisfactory
successfully
responsibility
unreasonable

Lesson 19

replies
peeved
affected
dignified
justify
pathetic
attempted
discretion
eighteenth
convinced
unworthy
consisting
informing
sentiment
fascinating
consequences
recognized
consolidation
willingness
specific

Lesson 16

developments
agencies
accord
convey
canceling
designed
concluded
departure
strictly
reward
confusing
anticipate
supported
distributed
endeavored
extensive
exclusively
circumstances
illustrations
contemplating

Lesson 20

varied
spirits
seized
dined
conceived
devote
engaged
released
injustice
prevail
realized
permitted
incapable
depending
eventually
contemplated
admiration
unexpected
suspicion
reservation

Lesson 21	Lesson 22	Lesson 23	Lesson 24
retire	vital	routed	injured
resign	accused	urged	enabled
actual	gossip	volume	contrast
exists	offset	inspired	internal
accept	reflect	requires	resolved
pledges	humor	consists	opinions
anxiety	existing	exciting	recovered
deserved	program	apologize	anticipated
exquisite	impulse	regretted	persuaded
esteemed	pretended	enjoyable	exceptions
relieved	rendered	differently	promptness
indicates	assigned	experiences	immensely
operating	admirable	membership	meanwhile
publicity	thorough	disagreeable	procession
excessive	simplicity	conviction	confirmation
discouraged	submitting	substituted	continuous
atmosphere	vacancies	combination	estimation
photograph	tremendous	conscientious	sentimental
surrounding	sympathize	comparatively	temporarily
satisfactorily	enthusiastic	determined	ridiculous
Lesson 25	Lesson 26	Lesson 27	Lesson 28
image	insult	tenth	utmost
virtues	recital	assisting	visible
suspected	insisted	whereas	despair
situated	specimen	beloved	separate
eliminate	completing	recollect	reunion
cordially	occasions	analysis	outlined
deducting	automatic	relativity	prettiest
compliment	enclosure	response	retained
assuming	practicing	beneficial	describing
remitting	marvelous	recommend	courtesies
indefinite	particulars	specimens	substance
graduate	respectable	surrounded	furthermore
prevented	violent	experience	complements
remarkable	endeavoring	convenience	confidential
positively	individual	possibilities	assortment
containing	refreshments	civilization	necessarily
provisions	impressions	arrange	accomplished
observation	undoubtedly	commencement	sympathetic
permanently	magnificent	misunderstood	accommodating
representation	disappointment	extraordinary	announcement

Lesson 29	Lesson 30	Lesson 31	Lesson 32
vanity	protest	tariffs	retired
thereby	respond	heartly	scenery
intense	adorable	witness	insured
various	enormous	victim	activity
obvious	secretary	innocent	specially
schedule	coordinate	socialist	hitherto
revision	inquiries	behavior	harmony
existence	impressed	proceeded	conscience
elaborate	soliciting	curiosity	explaining
confirming	earnestly	judgment	dreadfully
resort	intentions	advantage	contributions
thrilling	ordinarily	inquiry	appropriate
objections	progressing	maintained	represented
resources	treasurer	introduction	authorities
substitute	misspelled	occasional	picturesque
invitations	supposing	voluntary	explanation
investigation	conveniently	succeeding	occasionally
probability	sufficiently	characteristics	acknowledging
acquainted	anticipating	superintendent	inconvenienced
incidentally	contemplated	estimate	encouragement

Suggested Procedures for Teaching Spelling

A daily period of from 15 to 20 minutes devoted to the teaching of spelling is recommended.

Two methods have been widely used. These are the "Test-Study Method" and the "Study-Test Method." Preference is left to the judgment of the teacher. His decision will in all probability be based on his personal success with one of the methods. The essential difference between the two methods is this:

In the "Test-Study Method" pupils are first tested on a whole unit's work before they have studied any of the words. This pre-test is for the purpose of determining which words each pupil already knows. During the subsequent study period each pupil studies only the words he misspelled on the pre-test.

In the "Study-Test Method" pupils study all the words in the lesson before any test is given.

The following principles of teaching are basic to both methods:

1. The first step in presenting a new word is to pronounce it distinctly, emphasizing the syllables slightly. Pupils should repeat each word in concert after the teacher has pronounced it.
2. The teacher should make sure that every child understands the meaning of every word studied.
3. Diacritical marks, underlinings, hard spots, etc., should not be used in presenting words for spelling. The image of the word should not be marred in any way. Besides, studies show that different pupils don't misspell a given word in the same way.
4. Spelling rules seem of little value below the seventh grade.
5. Some provision should be made for pupils to use their spelling words in other written work in school.
6. Provision should be made for systematic review of all words studied.
7. Each pupil should keep a list of words he has misspelled and master them.
8. Each pupil must see clearly what progress he is making.
9. Each pupil must be taught an effective method of study.
10. Encourage pupils to develop a pride in correct spelling.
11. It is recommended that children who are poor spellers be given spelling lists of a grade or two below their own grade. For very poor spellers, the number of words to be mastered in a single lesson may be reduced if care is taken that the most important words are mastered thoroughly.
12. Children who can spell all of the words at their grade level may be given word lists intended for more advanced grades.

In the "Test-Study Method," the week's procedure is as follows:

- | | |
|-----------|--|
| Monday | Test all pupils on all the new words in the week's assignment. |
| Tuesday | Supervise the pupils' individual study of words missed on Monday. Each pupil studies only the words he missed on the pre-test. |
| Wednesday | Test all pupils on the new and the review words in the week's assignment. |

Thursday	Supervise pupils' individual study of the words missed on Wednesday.
Friday	Test all pupils on the new and the review words in the week's assignment. Score papers, record scores, and make charts showing individual and class progress.

In the "Study-Test Method," the work is planned on the basis of a daily assignment of about four new and four review words. The number of words varies with the age and grade of the pupils taught.

Teaching Pupils How to Study Spelling Effectively

The following steps should not vary essentially from grade to grade:

How to learn to spell a word:

1. Pronounce it correctly, saying each syllable very distinctly and looking closely at each syllable as you say it.
2. With closed eyes try to see the word syllable by syllable, as you spell it in a whisper.
3. Open your eyes and look at the word to see whether you had it right. If you did not have it right, do step one and step two again. Keep trying until you can say the letters correctly with closed eyes.
4. When you are sure that you have learned the word, write it without looking at your book and then compare your attempt with the book in order to see whether you wrote it correctly. If you did not write it correctly, go through steps one, two, three, and four again.
5. Now write the word again. See whether it is right. If it is, cover it with your hand and write it again. If your second trial is right, write it again. If all three trials are right, you may say that you have learned the word for the day. If you make a single mistake, begin with step one and go through each step again.

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THE PROGRAM IN HANDWRITING

WHY HANDWRITING SHOULD BE TAUGHT

The ability to write both legibly and rapidly is needed in nearly all the business and social activities of life. The program in handwriting should develop in pupils sufficient skill to meet these needs. Studies made by Dr. Frank Freeman and others show that most business and social activities require handwriting which has a quality of about 60 on the Ayres Scale¹ and a speed of about 65 letters per minute. Additional investigations show that these standards can be achieved by most pupils by the end of the sixth grade. To continue practice in handwriting beyond these standards may be desirable in some cases, but with most children the time could probably be more profitably spent by devoting it to some other school subject not so well mastered.

HOW HANDWRITING MIGHT FUNCTION IN OTHER ACTIVITIES

Although it is advisable to teach handwriting directly in a special daily period of about ten minutes and not to depend upon incidental learning, it is most important to see that the work is integrated with other school activities. This can be accomplished in two ways.

The content used in all writing instruction, including practice exercises, should be selected from the subject matter of other school work. The list of spelling words furnishes excellent practice material in handwriting. The first words that pupils write should be those they have already experienced in reading, social studies, science, and health, or words that they need to express their own ideas in written composition. This type of integration should be maintained throughout the grades.

Pupils should be required to maintain satisfactory standards in handwriting in all written work done, whether in connection with the handwriting period or with other school activities. Teachers will need to be particularly insistent that pupils form letters correctly in spelling. The importance of legibility in writing figures in arithmetic and in addresses, telephone numbers, etc., must be explained to pupils. Pupils excused from hand-

¹Ayres, L. P. *Measuring Scale for Handwriting*. (Bloomington, Illinois: Public School Publishing Company).

writing practice because of having met the standards for their respective grades should be watched closely and be returned to practice lessons if their writing in other school work falls below standard.

A SUGGESTED HANDWRITING PROGRAM BY GRADES

GRADE ONE

Suggested Outcomes for Pupils of Average Ability by the End of Grade One

1. Ability to write on the board or with pencil simple words and sentences used in connection with other school activities, using good form and ease of movement
2. Ability to write digits learned in other school activities (Usually figures from 1 to 10 are all that are needed.)
3. Ability to write with pencil, standard speed and quality as measured by a handwriting scale
4. A knowledge and habit of using correct writing position at the board and at desks

Suggested Procedures and Other Aids for Teaching

It is recommended that work in handwriting should not be begun until pupils have something they wish to express in writing. If the programs in composition, reading, and social studies are functioning, handwriting may be begun with some groups of pupils very soon after school starts. Writing lessons should be delayed until pupils have developed a sight vocabulary in reading. Manuscript rather than cursive writing is recommended. (See page 113.)

Begin instruction by writing familiar words on the board which the pupils have a need for writing. The teacher should write each letter form carefully, slowly, and often enough to be observed by all pupils in the group. Then have pupils copy them.

Proper position at the blackboard is important. Pupils should stand erect but relaxed, facing the board with both feet on the floor to avoid standing on one foot or leaning on the board. The writing can be done but at eye level with good arm freedom, not cramped finger movement. Nothing need touch the board but the end of the chalk.

The words selected for practice should be familiar to the pupils, easy to write, and needed by the pupils for use in other school activities. Simple sentences may be introduced as soon as pupils have acquired some skill in writing words. The writing of digits should be introduced as they are needed by the pupils for other school activities.

Writing at seats may be started after pupils feel freedom and sureness at the board, and when they feel the need of such writing. In writing at the desk, a large crayon or large-size pencil is recommended. Writing should be done on large sheets of wrapping paper, or large-size penmanship paper with ruled lines an inch apart. Most beginning pupils write letters about an inch high and gradually reduce the size of the writing to about one-half inch by the close of the school year. Good form and ease of movement rather than skill is stressed by most teachers.

GRADES TWO AND THREE

Suggested Outcomes for Pupils of Average Ability by the End of Grade Two

1. Further improvement in form and ease of movement and other first-grade skills
2. Ability to write all small letters, all capitals needed in composition, and all digits needed in arithmetic
3. Writing should continue large—about one-half inch in height for single-spaced letters
4. Ability to write with pencil, standard speed and quality as measured by a handwriting scale
5. Ability to write correctly single letters and combinations of letters when dictated

Suggested Outcomes for Pupils of Average Ability by the End of Grade Three

1. Further growth in all skills listed for the first and second grades
2. Ability to write in correct form the problems needed in arithmetic at this level
3. Ability to write a simple letter, using the correct form in regard to margins, spacing, placement of headings, etc.

4. Ability to write smaller than in grade two (Single-spaced letters should be one-fourth inch or less in height)
5. Ability to write with pencil, standard speed and quality as measured by a handwriting scale
6. Ability, under the teacher's direction, to give self-criticism and to diagnose simple handwriting difficulties by means of a diagnostic chart

Suggested Procedures and Other Aids for Teaching

A daily handwriting period of from 10 to 20 minutes is recommended. Emphasis should still be on form and ease of movement. Most of the practice exercises should deal with meaningful material, but some attention may be given to specialized exercises needed by the class as a whole or by individual pupils.

It is recommended that manuscript writing be used exclusively throughout the first and second grades and at the beginning of the third grade. During the third grade, cursive writing might well be introduced. After that, both manuscript and cursive writing should be practiced, but the most practice should be on cursive writing.

GRADES FOUR, FIVE, AND SIX

Suggested Outcomes for Pupils of Average Ability by the End of Grade Four

1. Further learning in all skills developed during the first three grades
2. Ability to write all letters with fluent movement and without hesitation
3. Rapid development in quality and speed should be apparent
4. Ability to write correctly all manuscript forms needed in connection with other school work
5. Ability to write smaller than in grade three (Single-spaced letters should be about three-sixteenths of an inch in height.)
6. Ability to write with pencil at standard speed and quality as measured by a handwriting scale
7. Ability to use a coarse pen and good black or blue ink or a fountain pen if one is available

Suggested Outcomes for Pupils of Average Ability by the End of Grade Five

1. Further learning in all skills previously introduced
2. Ability to diagnose individual difficulties using a diagnostic chart independently
3. Ability to write with ink, standard speed and quality as measured by a handwriting scale

Suggested Outcomes for Pupils of Average Ability by the End of Grade Six

1. Further learning in all skills introduced during the first five grades
2. Ability to use a finer pen point than in preceding grades
3. Ability to use unruled paper
4. The size of the writing should become fixed
5. Ability to write with ink, standard speed and quality as measured by a handwriting scale
6. Skill in self-criticism and diagnosis

Suggested Procedures and Other Teaching Aids

A daily handwriting period of ten minutes is recommended. The chief emphasis should be upon the development of legibility. Practice exercises on certain difficult letters such as *a, e, r, t, d, p, y*, and combinations of letters as *oa, oo, cl, ch, in, on, nn, mm, um, un, oy, aw*, etc., should be given as needed. Most of the practice exercises should be concerned with the correction of individual errors. Much practice in self-criticism is desirable.

Attention should be given to the correct and artistic arrangement of such writing on a page as will be used for other school work as: the arrangement of arithmetic problems, an outline, a note, and a letter. The importance of good writing in school and in life outside the school should be stressed.

Special instruction on the care of the pen, how far to dip the pen to avoid blots, how heavy to press, and how to hold a pen should precede the use of ink.

It is recommended that most of the practice exercises and the pupils' written work be done in cursive writing but that some practice and use of manuscript writing be continued.

GRADES SEVEN AND EIGHT

Since most pupils will have reached the standard of writing with a speed of 65 letters a minute with a quality of 60 on the Ayres Scale, no regular class period need be devoted to work in handwriting above grade six. Pupils who fall below this standard in any of their written work should be given appropriate exercises until they reach the standard.

EVALUATING THE PUPIL'S WORK

Improvement in writing depends largely on a child's desire and ability to be self-critical of his own work. The key to mastery lies in this self-evaluation. The child must be taught to compare his writing at regular intervals with that of a standard scale and thus to determine his own inaccuracies and to practice the points upon which he needs to improve most.

There are scales and tests prepared which show pupil progress in rate and quality for each grade level. The following are commonly used:

Ayres, L. P. *Measuring Scale for Handwriting, Elementary Grades*. New York: Russell Sage Foundation.

Conard, Edith U. *Manuscript Writing Standards*. New York: Bureau of Publications, Teachers College, Columbia University, 1929.

Courtis, S. A. *Standard Practice Tests in Handwriting, Grade 3-8*. Yonkers-on-Hudson, New York: World Book Company.

Freeman, F. N. *Chart for Diagnosing Faults in Handwriting, Elementary Grades*. Boston: Houghton Mifflin Company.

Freeman, F. N. *Handwriting Measuring Scales by Grades, Elementary Grades*. Columbus, Ohio: Zaner-Blosser Company.

New York City Penmanship Scale. New York: The Macmillan Company.

Pressey, S. L. and Pressey, L. C. *Pressey Chart for Diagnosis of Illegibility in Handwriting*. Bloomington, Illinois: Public School Publishing Company.

Thorndike, E. L. *Handwriting Scale, Grades 2-8*. New York: Bureau of Publication, Teachers College, Columbia University.

Winnetka Manuscript Writing Scale. Winnetka, Illinois: Winnetka Individual Materials, Inc.

West, P. V. *American Handwriting Scale.* New York: A. N. Palmer Company.

Wise, Marjorie. *On the Technique of Manuscript Writing.* New York: C. Scribner's Sons, 1924. p. 40. ("Judging the Work." Not a scale.)

At frequent intervals, once every month or six weeks, pupils should be given informal writing tests. The material to be used in a writing test should be familiar in content such as:

A familiar nursery rhyme as, *Jack and Jill went up the hill to fetch a pail of water*, etc.; counting—*one, two, three, four, five, six*, etc.; or some sentence which contains all the letters of the alphabet as, *The quick brown fox jumps over the lazy dog*.

After pupils have had preliminary practice, a signal should be given to begin the test. Pupils write the sentence as often as possible for three minutes. The number of letters written is divided by three to determine the speed per minute. Each paper is compared with a standard scale to determine quality.

Pupils who have met or surpassed the standard for the grade may be excused from further drill in handwriting as long as proper standards are maintained in all written work.

These test papers may be kept and several samples taken over a period of time displayed on the bulletin board to show pupils and parents the progress which has been made.

Keeping records of the results of each writing test will facilitate remedial work. A diagnostic chart that shows the various skills in writing helps the child to know just what to stress in his practice. The following is suggestive and may be hectographed for each pupil. A pupil may keep one for himself, and the teacher may have one. It is interesting for the teacher and pupil to compare their respective ratings of the pupil's work.

My Writing Chart

What the numbers mean :

- | | |
|--------------|------------------------|
| 1. Very good | 3. Needs practice |
| 2. Good | 4. Needs much practice |

Name: Helen Williams

Good Writing	Begin- ning of Year	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	End of the Year
Form										
In drill	2	1								
In all writing	2	2								
Slant	2	2								
Alignment	2	3								
Good posture	3	2								
Ease of movement	3	2								
Smoothness	2	2								
Spacing										
Between letters	2	2								
Between words	3	2								
Neatness	1	1								
Size										
Too large										
Too small										
About right	x	x								
Speed, letters per minute	51	52								

SUGGESTED ADAPTATIONS FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

With the exception of pupils just beginning to learn to write and pupils changing from manuscript to cursive form, all primary pupils may be grouped together for the handwriting period. Pupils from grade four through grade eight may be grouped together for the handwriting period. In most of the handwriting lessons, each pupil will be working to overcome individual difficulties in his handwriting.

SPECIAL HELPS IN TEACHING HANDWRITING

Special Difficulties

The four letters—*a*, *e*, *r*, and *t*—account for most of the illegibilities made by elementary pupils. Four types of strokes—failure to close letters like *o* and *a*; closing looped strokes like *l* and *y*; using straight-up strokes rather than rounded like *m* and *n*; and looping non-looped strokes like *t*—cause many errors. It is necessary for the teacher to determine just which letters are poorly formed by each pupil and by the class as a whole and provide follow-up practice in writing words containing these letters, such as *boat*, *tree*, *late*, *lovely*, *noon*, *man*, etc. Special practice is needed in connecting letters that end above the line with letters that begin on the line such as *os*, *ba*, *op*, *vi*, *wr*. Joining over and under strokes or under and over strokes require special practice in such letters as *ld*, *ho*, *ma*, *ca*.

Correct Position

A good position is necessary from the standpoint of health and of good writing. The best writing position is a natural, comfortable one. Both arms rest naturally on the desk or table. The head should be held fairly erect. Both feet rest on the floor. The third and fourth fingers of the writing hand should rest lightly on the paper and serve as guides. Because of differences in the shapes of pupils' hands, it seems inadvisable to insist that every pupil in a class hold his pen exactly the same way. With most pupils the hand should be about half closed. The point of the thumb should be about even with the first joint of the index finger. The pen or pencil should be held loosely. Light should come from the left side. The paper should be directly in front of the writer, and should be tilted so the lower edge forms an angle of about 30 degrees with the edge of the desk.

Left-handed Pupils

Approximately one pupil in twenty-five is left-handed. It seems inadvisable to force a definitely left-handed pupil to write with his right hand. Careful study should be made to determine whether a pupil is definitely left-handed. Without the pupil's awareness, the teacher might notice which hand he uses in other activities. With which hand does he pick up things, cut with scissors, color, paint, saw, or hammer? It is inadvisable to force a right-handed intermediate grade pupil who writes left-handed to change if left-handed writing habits have already been well established. Great care should be taken to see that left-handed pupils write just as right-handed pupils, except that all positions are exactly reversed. It is especially important that the paper be tilted to the right rather than to the left. Otherwise upside-down and awkward positions of hand and pencil or pen and paper often result.

Letter and Number Forms

1. The capital alphabet

A B C D E F G H I J K
L M N O P Q R S T
U V W X Y Z

2. The small alphabet

a b c d e f g h i j k
l m n o p q r s
t u v w x y z

3. Numbers

1 2 3 4 5 6 7 8 9 0

Manuscript Writing

The use of manuscript writing is rapidly gaining favor. It differs from cursive writing in that it is built on straight lines and parts of perfect circles. Each letter is separate. The letters of a word are grouped closely together and space left between words. The claims for it are:

1. It is easier for young children to learn.
2. It is more nearly like the print that pupils are learning to read, and, therefore, facilitates learning to read, spell, and write.
3. It is more legible.
4. It is easy to transfer to cursive writing.
5. Throughout the primary grades, at least, it can be written as rapidly as cursive writing.
6. It is a more attractive form of writing..

In some schools manuscript writing is taught throughout the grades. In some it is taught in the primary grades only. In this course of study it is recommended that manuscript writing be taught throughout the first, second, and for the first part of the third grade, and that cursive writing be added during the third grade. If it is so taught, further handwriting drills throughout the grades should provide practice in both cursive and manuscript writing. Adults are constantly being asked to "print your name" on important blanks. The same procedures apply to teaching manuscript as in teaching cursive writing.

The following alphabet is manuscript in the simplest form:

a or abcdefghijklm

nopqrstuvwxyz

ABCDEFGHIJKLMNOPQ

RSTUVWXYZ

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SOCIAL STUDIES IN THE ELEMENTARY SCHOOL

WHY SOCIAL STUDIES SHOULD BE TAUGHT

The social studies deal mainly with the relation of man to his social and natural environment. Much emphasis is placed on group relationships and social living. Through study and experiences in these relationships, it is hoped that the child will develop into a socialized being, ready to accept responsibility in group life.

The present world is so complex and changing at such a rapid tempo that we must help the young individual find his place in it. Through studying things as they are and through delving into the past to find out how they came to be, the child begins to understand his surroundings. His world should be kept as simple and natural as possible. *The impact of world clashes should be introduced very gradually, and at a time in the child's development when he can grasp its meaning and not be emotionally upset by the confusion and disorder.* For these reasons, this course begins with the child's own world, the home, and then progresses to the school, his new environment. Later he studies and participates in a bigger world with ever-widening horizons: the neighborhood, the community, the state, and the world at large. This is developed through a progression of experiences over a period of eight years.

Because social living is at the core of the social studies, the scope of this course is outlined in ten "Major Areas of Social Living." These areas appear again and again in the various units of the course. Each is studied to a certain degree at each grade level, so that the understandings involved become deeper and clearer as the pupil matures. The sequence of the course is developed through "Centers of Interest" for each grade, beginning with "Living in the Home and School" in the first grade and proceeding to "The Development of the United States into a Great Nation" in the eighth grade. Throughout the course emphasis is laid on the child's own environment, his community. An effort has been made to teach about the public school through

giving considerable attention to the "Education" area at each grade level.

This social studies course has been unified to the extent of fusing the fields of history, geography, and civics in the upper grades. This had previously been done in the first four grades. Now we have continued this trend through the remainder of the course. This change should simplify both teaching and learning, since the formerly separate fields will now be studied in their relationships. In daily programming for these upper grades, time should be allotted for social studies in accord with the time formerly given to the three separate subjects. This will provide time for developing the broader units more adequately and for including more "activities" in the program. *It isn't so much what individuals memorize as what they experience that has value.* For the social studies, experiences in group living, in cooperative endeavor, and in democratic ways of living are essential if we are to perpetuate and enrich the American way of life for all of our pupils.

As few changes as possible have been made in this course in order to simplify the work of those who will use it. Only one major change was made in the "Centers of Interest by Grades." The study of "Our American Neighbors" was placed in the sixth grade and "Life on Other Continents" in the seventh. This shifts the study of the more complex continents to a grade level where the pupils are more likely and ready to understand it. Much emphasis is placed on the study of "Our American Neighbors" because it is felt that we should solidify the Americas as far as possible through better understanding of their peoples, lands, and cultures. The public school can play an important part in this work.

Major objectives to be achieved in the social studies include:

1. To acquire attitudes, skills, and habits needed for effective group relationships.
2. To acquire an understanding of the relationships and responsibilities of group life.
3. To gain an understanding of man's relation to his environment.
4. To gain an understanding of the history of our nation and its institutions.

5. To gain an understanding of the development of the democratic way of living.

HOW SOCIAL STUDIES MIGHT FUNCTION IN OTHER ACTIVITIES

Since they deal with human relationships, the social studies are right at the core of the curriculum. They give substance and meaning to most of the activities carried out in the school. When we write, read, solve problems, and engage in art activities, much of the subject matter deals with the social studies realm. In turn, experiences in the skills and expressional subjects develop abilities which enable the child to carry on social studies activities. *Suggestions for carrying out many of the art activities listed in the social studies units may be found in the Art section of this course of study.*

Much of the reading program may concern itself with social studies subject matter. Most of the stories of basic readers are concerned with human relationships and much work-type reading deals with topics from the social studies. Likewise, oral and written expression may often be about social studies content, as may art and music expression. Many arithmetic experiences deal with those computational problems met often by people in their daily living.

The social studies should give boys and girls so many ideas, understandings, and interests that their expressional work will be rich and meaningful. They will have something to write, talk, paint, and sing about. This, of course, will be conditioned by how well their learning experiences in the various fields are related to each other through the guidance of the teacher.

SUGGESTED SOCIAL STUDIES PROGRAM BY GRADES

The social studies program is developed through suggested units for each grade. The scope of the course for each grade consists of "Major Areas of Social Living" as follows:

1. Family Life
2. Education
3. Transportation and Communication
4. Earning a Living

5. Production and Consumption of Life Necessities (Food, clothing, shelter)
6. Conservation of Human and Natural Resources
7. Leisure Time
8. Cultural Life (Art, music, dance, literature, etc.)
9. Religion
10. Participating in Community Life

The scope remains constant for all the grades throughout the course. Understandings and experiences in these ten major areas develop progressively through repetition in wider relationships—through the grades. They appear again and again in the various units.

The sequence of the course is developed through "Centers of Interest by Grades," as follows:

- | | |
|-------------|--|
| Grade I. | Living in Home and School |
| Grade II. | Living in the Local Community |
| Grade III. | Living in the Wider Community |
| Grade IV. | Community Life in Other Lands |
| Grade V. | Life in the United States |
| Grade VI. | Our American Neighbors |
| Grade VII. | Life on Other Continents |
| Grade VIII. | Colorado <i>and</i> The Development of the United States into a Great Nation |

These centers progress from living in home and school to ever widening areas of living in an interdependent world.

Suggested units are included in this course of study for the average or typical class. It is recommended that each teacher may substitute units or activities within units whenever it will better meet the needs of his pupils and his community.

The first unit for each grade is developed in considerable detail, with more activities suggested than any one class would be likely to undertake. Because of limited space the other units are developed with only problems and a few activities suggested for each unit. It is hoped that these will suggest many others and that teachers will work out more complete units from these as they develop them with children.

Throughout the units, an attempt has been made to include a balance of activities which should lead to good unit teaching. Hence we find approach activities first, then informational and expressional (which usually go hand in hand), and last evaluational and culminating activities. After the first unit for each grade, the activities are not so labeled, but they have been developed in much the same order, from approach to culminating.

Approach activities should be mostly first-hand, with excursions and visual aids looming large. Informational activities should include much reading, but also interviewing and taking excursions. Expressional activities usually develop right along with the informational and include reporting, creative writing, dramatic interpretations, and the like. An effort should be made to include a good balance of expressional activities, to include some oral, written, art, music, construction, and dramatic expression with each unit. Evaluational activities should be used all through the development of a unit, with pupils and teacher evaluating each day's achievements and the accomplishments of each activity period as they go along. Final evaluation may include pencil and paper tests, but may also mean an informal discussion of the best things done and the weak points of the unit.

A culminating activity is a good way to close a unit as it reviews what has been done and gives the unit experience the feeling of completeness. The best culminating activities tend to be simple, are carried out in the classroom, and have the parents as an audience. This is an excellent means of acquainting the parents with the school's program.

Materials for the units are suggested through a supplement from the State Library. This will include lists of reading materials and visual aids for each unit.

OUTLINE OF THE SOCIAL STUDIES PROGRAM BY GRADES

<p>Grade One each year</p> <p>or</p> <p>Grades One and Two in years beginning in the fall of 1943, 1945, 1947, etc.</p>	<p style="text-align: center;">Living in Home and School</p> <p>Unit I. Our Home</p> <p>Unit II. Our School</p> <p>Unit III. Pets in the Home</p> <p>Unit IV. The Food of the Family</p> <p>Unit V. The Clothing of the Family</p> <p>Unit VI. The Recreation of the Family</p>
<p>Grade Two each year</p> <p>or</p> <p>Grades One and Two in years beginning in the fall of 1942, 1944, 1946, etc.</p>	<p style="text-align: center;">Living in the Local Community</p> <p>Unit I. Community Helpers Who Provide Shelter for the Family</p> <p>Unit II. Community Helpers in the Schools</p> <p>Unit III. Community Helpers Who Protect the Family</p> <p>Unit IV. Community Helpers Who Provide Food for the Family</p> <p>Unit V. Community Helpers Who Provide Clothing for the Family</p> <p>Unit VI. How Community Helpers Provide Recreation for the Family</p>

OUTLINE OF THE SOCIAL STUDIES PROGRAM BY GRADES (Continued)

<p>Grade Three each year or Grades Three and Four in years beginning in the fall of 1943, 1945, 1947, etc.</p>	<p>Living in the Wider Community</p> <p>Types of Communities</p> <p>Unit I.</p> <p>Unit II.</p> <p>How Communities Help Each Other</p> <p>Unit III.</p> <p>Making a Living in the Community</p> <p>Unit IV.</p> <p>Transportation in the Community</p> <p>Unit V.</p> <p>Communication in the Community</p> <p>Unit VI.</p> <p>Indians of Colorado and the Southwest</p>
<p>Grade Four each year or Grades Three and Four in years beginning in the fall of 1942, 1944, 1946, etc.</p>	<p>Community Life in Other Lands</p> <p>Community Life in Colorado</p> <p>Unit I.</p> <p>Unit II.</p> <p>Community Life in a Mountainous Country (Switzerland)</p> <p>Unit III.</p> <p>Community Life in a Hot, Dry Country (The Sahara)</p> <p>Unit IV.</p> <p>Community Life in a Hot, Damp Country (Amazon or Congo)</p> <p>Unit V.</p> <p>Community Life in an Island Community (Hawaiian Islands)</p> <p>Unit VI.</p> <p>Community Life in the Cold Lands</p>

OUTLINE OF THE SOCIAL STUDIES PROGRAM BY GRADES (Continued)

<p>Grade Five each year or Grades Five and Six in years beginning in the fall of 1943, 1945, 1947, etc.</p>	<p>Unit I. Unit II. Unit III. Unit IV. Unit V. Unit VI. Unit VII.</p> <p>Life in the United States Looking at Our Country as a Whole The Northeastern States The Southeastern States The North Central States The South Central States The Mountain States The Pacific States</p>
<p>Grade Six each year or Grades Five and Six in years beginning in the fall of 1942, 1944, 1946, etc.</p>	<p>Unit I. Unit II. Unit III. Unit IV. Unit V. Unit VI. Unit VII. Unit VIII.</p> <p>Our American Neighbors Canada, Our Friendly Neighbor to the North Mexico, The Land of Contrasts Central America and Islands of the West Indies Preview of South America ABC Countries Central and Northern Countries of South America Alaska Hawaiian Islands and Our Other Pacific Possessions</p>

OUTLINE OF THE SOCIAL STUDIES PROGRAM BY GRADES
(Continued)

	Life on Other Continents
Grade Seven each year	Unit I. History of Early Man
or	Unit II. Early Civilizations
Grades Seven and Eight in years beginning in the fall of 1943, 1945, 1947, etc.	Unit III. Europe and Its People
	Unit IV. Africa
	Unit V. Asia and Its People
	Unit VI. Australia and the Islands of the Pacific
Grade Eight each year	Colorado <i>and</i> The Development of the United States into a Great Nation
or	Unit I. Colorado: Our State in a Modern World
Grades Seven and Eight in years beginning in the fall of 1942, 1944, 1946, etc.	Unit II. The Early Development of the United States as a Nation
	Unit III. Growth and Expansion of the New Nation
	Unit IV. Disunion and Reconstruction
	Unit V. The Nation Progresses (1872-1935)
	Unit VI. The United States in the World Today

GRADE ONE

CENTER OF INTEREST—LIVING IN HOME AND SCHOOL

UNIT I. OUR HOME

Overview

The first social studies experiences of the child should be concerned with the home as that is the environment he knows best. Through the child's relations with the home we have the best chance of really affecting his behavior. By a study of the home and home relationships, the first grade child becomes conscious of the interdependence of the family group. He appreciates his home more, reacts more intelligently to this environment, takes more responsibility, and finds the things he does in the home more interesting, rather than taking them for granted. He begins to understand the need for a place in which to live, to secure protection from the weather, to take his troubles, to be alone with the family, and to entertain his friends.

Objectives

1. To help the child understand and appreciate his home: how it contributes to his needs, comfort, and well being.
2. To help the child know better the relationships, duties and responsibilities of the members of the home. (Home is what every member makes it.)
3. To teach through experiences the necessary attitudes and behavior for a happy home life: courtesy, kindness, regard for the rights of others, etc.
4. To teach the child that waste and carelessness deprive children of many worthwhile things in the home.
5. To create a desire in the child to be a helper in the home.
6. To begin to develop an understanding of the interdependence of people.

Problems for Developing the Unit

1. Who live in houses? (Different sized families)
2. Why do we need houses?
3. What do the members of a family do? What are some of the things usually done on different days of the week?

4. What kinds of houses are there? (Cottages, apartment, etc.)
5. Where are the homes of the boys and girls of the class located?
6. What materials are used in building houses?
7. What rooms are usually in houses?
8. How is each room (*a*) furnished, (*b*) made beautiful, (*c*) kept clean, (*d*) used by the family.
9. How is the outside of a home made beautiful?
10. How must we be careful in the home?

Activities

Approach

1. Make an excursion into the neighborhood to see different types of houses: cottage, two-story, brick, cement, etc.
2. Observe pictures of houses on bulletin board.
3. Look at pictures in readers that show types of houses or rooms with members of a family engaged in interesting activities.

Informational

1. Ask some mother's consent and visit home to see rooms, furniture, hangings, carpets, etc.
2. Collect and discuss pictures and objects to clarify: family members, homes, furnishings, plumbing, mother's duties, father's duties, gardening, etc.
3. Make reading charts about members of the family.
4. Make and read charts related to the ten problems listed for "developing the unit."
5. Read easy picture books about home life—placed on the reading table.
6. Read stories about the family and its activities in reading readiness books, pre-primers, primers, and first readers.
7. Invite a mother and father to come in to talk to the children. Let the children ask questions.

Expressional

1. Draw or paint pictures of houses the children live in.
2. Each child draw a picture of his family and tell about each member.

3. Discuss why some families need larger houses than others.
4. List things done to help mother keep her house.
5. Make individual picture dictionaries of words learned in this unit.
6. Make and furnish a playhouse for the classroom.
7. Make reading charts about the playhouse.
8. Discuss how home members may have a happy time in the home.
9. Make a booklet of rooms in houses. (Cut from magazines, catalogs, and papers.)
10. Play matching games based on activities carried on in each room of the house.
11. Model from clay: objects in the home, members of the family, pets.
12. Dress dolls to represent a family.
13. Make stick puppets of members of the family.
14. Make a small doll house to take home.
15. Make a dust cloth or tea towel for mother.
16. Make original wallpaper, tablecloth, and napkin designs for the playhouse.
17. Express rhythmically: rocking baby, walking, running, skipping, sweeping, washing clothes, ironing.
18. Play singing game: "Here We Go Around the Mulberry Bush."
19. Sing songs about the home and home life.

Evaluational

1. Hold an informal discussion of all the things learned about the family and home.
2. Play a game with all the new words learned in the unit. (Identify words indicated on a chart by a pupil leader.)
3. Read and discuss charts made about each of the ten problems as the need arises.
4. As experiences are provided for each problem, they should be evaluated by pupils and teacher, in terms of the plans previously made by them.

Culminating

1. Give a party in the house the children built. (A tea might be given with part of the class arriving, being entertained, and leaving at a time.)
2. Dramatize stories read about living in the home.
3. Have an exhibit of peep shows of the different rooms of houses.
4. Give a little play built around the playhouse activities. Let each child have a part. Invite room mothers as guests.
5. Put pictures made in connection with each problem into a simple "movie." Children make titles and explain to guests.
6. Make a class book into which are put pictures and stories in connection with each problem. Children read, show and explain to guests.
7. Make and exhibit a diorama of each of the rooms in the house.

UNIT II. OUR SCHOOL**Problems for Developing the Unit**

1. Why do our parents send us to school?
2. What should we know about our school? Number of rooms: one room, two rooms, etc. Kind, location, and uses of rooms: classrooms, library, office, basement, auditorium, gym. Playground: swings, slides, trees, shrubs, walks, drives. (Uses of each.) Equipment: bulletin boards, lost and found shelves, drinking fountains, fire escapes or exits. (Uses of each.)
3. What people help us at school and what is their work? Service and control: principal, teachers, supervisors, custodian, doctor, nurse, dentist, parents.
4. How can we help to care for our school? Care of bulletin boards, materials, and flowers; make room more beautiful; consider others: obey rules; play safely.
5. What activities do we find in the school? (Study, recess, games, lunch, singing, drawing, making things.)
6. How can we be healthy at school?
7. How can we help each other?

8. How can we make the school beautiful?
9. How do the boys and girls of our class get to and from school?
10. What safety rules must we practice (*a*) in the classroom, (*b*) in halls, (*c*) on the playground, (*d*) in lavatories, (*e*) coming to and going from school?

Activities

1. Explore the school building and playground.
2. Visit the principal to find out how he helps the school.
3. Make an excursion with the custodian to see the basement, the heating and lighting units, supplies that are in his care, unloading of coal, disposal of ashes.
4. Participate in celebrating the holidays in classroom and school. Observe how other classes celebrate these days.
5. Make illustrated reading charts about school activities, people, and the building.
6. Read charts and stories in easy readers about school life.
7. Make rules for conduct in different places at school.
8. Delegate school duties to members of the group. Help those in charge to do duties well.
9. Invite the nurse to give a talk about healthful living in the school.
10. Make posters of safety on the playgrounds.
11. Make a safety scrapbook.
12. Dramatize stories read about school life. Play school.
13. Write a class letter about your school to parents and friends in other schools.
14. Make a library corner for the room with a reading table and chairs.
15. Draw pictures of the school building and of various people in the school. Label the pictures and make a class book.
16. Arrange an exhibit of books, poems, pictures, and other things showing the work about the school.
17. Give simple dramatizations that show habits of courtesy toward other children and adults in the school.

UNIT III. PETS IN THE HOME**Problems for Developing the Unit**

1. What animals make good pets? (Dog, rabbit, fish, white mouse, white rat, squirrel, parrot, cat, monkey, goat, calf, cow, chicken, pony, lamb, turtle, duck, horse, pig, bird, guinea pig.)
2. Why do people have pets? (Companionship, enjoyment, protection.)
3. How do people get their pets? (By purchase, from friends, by catching them "wild", by animal's own choice—where they come to us themselves.)
4. Why should we care for pets? (Health, cleanliness, safety—of both pets and ourselves.)
5. What kind of homes do pets have? (House, pen, basket, stable, hutch, cage, stall, sty, coop.)
6. What fun can we have with pets? (Teach them tricks, play with them, have them love us.)
7. How do pets show that they like us?
8. Why would we go to a pet show?
9. How should we care for our pets? (Treat kindly, feed properly, give fresh water, allow for sufficient range or space, keep clean, provide suitable shelter, give training.)

Activities

1. Ask the children to tell about their pets and the good times they have with them.
2. Visit a pet store to see different kinds of pets. Notice the foods, playthings, and equipment for animals sold in the store.
3. Visit homes to see pets in natural setting.
4. Have older students or adults show their pets to the class.
5. Bring trick animal to school and have him perform.
6. Have picture books about pet animals on the reading table.
7. Make and read chart stories about each of the animals seen at a pet store or brought to school.
8. Read stories about pets in readers and story books.
9. Care for a pet at school.

10. Make a book of ways to care for the pets of children in the class.
11. Construct a pet store to be used for pet day.
12. Make pictures of fun with pets.
13. Model animals from clay.
14. Make a booklet showing the types of animal shelter.
15. Tell original stories about our pets.
16. Have a pet show or pet day.
17. Have a puppet play (stick puppets) telling a story about pets.

UNIT IV. THE FOOD OF THE FAMILY

Problems for Developing the Unit

1. From where do we get our food? (Farm: fields, orchards, animals; home gardens, stores.)
2. What different kinds of food are required for healthful living? (Grain products, dairy products, fruits, vegetables, meats.)
3. How is food prepared for eating? (Washed, scraped, peeled; boiled, baked, broiled, toasted, fried, stewed.)
4. What utensils are used in cooking?
5. How is food preserved? (Canned, dried, salted, smoked, cold storage.)
6. What are some good breakfasts, lunches, and dinners for six- and seven-year-olds?
7. How may food be served?
8. How are dishes and linens made beautiful?
9. What are good manners at the table?
10. Why must we finish eating all on our plates?
11. How may we help our mothers prepare and serve meals for the family?

Activities

1. Study pictures or posters of children eating or serving foods.
2. See a health movie or pictures dealing with foods, appropriate for children of six and seven years.
3. Tell about the different kinds of foods used in the home: fruits, meat, vegetables, dairy products, etc.

4. Choose different committees to collect and study different types of foods. Arrange these foods into an exhibit of cereals, grains, vegetables, fruits, and nuts.
5. Visit a home to see mother baking.
6. Visit a home to see ways of keeping food cool: refrigerator, cellar, cooler, etc.
7. Find out several ways of preserving foods for future use. Experiment with some: make some jelly, dry an apple.
8. Experiment with the effects of air on a variety of fruit and vegetables.
9. Make a collection of cooking utensils, showing (*a*) different materials, (*b*) different styles, (*c*) different sizes. (Good opportunities for arithmetic.)
10. Discuss foods appropriate for special days, such as: Hal-
lowe'en, Thanksgiving, and Christmas:
11. Read stories about the family and how it is fed.
12. Make pictures of things the children like to eat. Discuss these pictures as to healthfulness of the food. Make them into charts of good breakfasts, lunches, dinners.
13. Make a chart of the different foods obtained from milk.
14. Read simple recipes for cooking foods.
15. Prepare a few kinds of food: butter, jello, cookies, preserves, bread, etc. (Children may eat these.)
16. Examine dishes, silver, and linens to see designs.
17. Model fruits and vegetables of clay. Design and make paper napkins and plates.
18. Learn how to set a table properly.
19. Play at keeping house. Dramatize activities of cooking, ordering groceries, setting the table, etc.
20. Have a party, setting tables, serving foods made, and practicing habits of courtesy.
21. Plan a simple pageant of vegetables, meats, milk and milk foods, potatoes, fruits, etc.

UNIT V. THE CLOTHING OF THE FAMILY

Problems for Developing the Unit

1. Why do people need clothes?
2. What kinds of clothing do we wear? (Work and play, special occasions, change in seasons.)

3. What are the most common clothing materials? (Cotton, wool, silk, linen, rayon, nylon, leather, rubber.)
4. What kinds of clothing are made from these different materials?
5. How do we take care of clothing? (Wash, iron, mend, press, hang, fold, air, change after school.)
6. How do people secure their clothing? (Ready made, made at home, tailor, dressmaker, shoe maker.)
7. What sizes of clothing do we wear?
8. How are clothes made pretty? (Fit, color, style, trimmings.)
9. What do father and mother do to give us clothing?

Activities

1. Examine garments worn by different members of the class.
2. Teacher read interesting stories about clothing to the class.
3. Make a collection of the common clothing materials and label each: clothing worn for play, for work, for special occasions.
4. Read stories from charts and easy readers which tell about clothes of boys and girls.
5. Discuss the articles needed to make a dress in the home, such as pattern, thread, needles, hooks, eyes, zippers, thimble, buttons, etc.
6. Make a collection of common materials and pictures of garments made from them, as wool: sweaters, stockings, mittens, dresses, coats, suits, etc. Mount on charts and print identifying labels.
7. Make a list of the new words used in the unit. Place on a chart for review through word and sentence games.
8. Dress a doll and compose a reading chart about it, telling materials and tools used.
9. Make drawings or cut out pictures of clothing worn for play, for work, for winter, for summer, for church, for school, for sleeping, for parties. Mount on posters or charts.
10. Have an exhibit of things used in taking care of clothing.
11. Have an exhibit of articles needed to wash clothes.
12. Have an exhibit of articles needed to make a garment.

13. Have a parade with children wearing different kinds of garments. Each tell something about the garments he wears.
14. Hold an exhibit of charts and booklets made by the children during the study of the unit.

UNIT VI. THE RECREATION OF THE FAMILY

Problems for Developing the Unit

1. How do members of the family have good times together at home? In parks, libraries, zoos, museums, concerts, and movies?
2. What kinds of toys do you like best?
3. What games do you like to play (outdoor, indoor)? What new games might we learn?
4. How does play help or hinder health?
5. What can we do to help mother when we play?
6. How does the family enjoy music together?
7. What books and magazines do the family enjoy?
8. How does the family enjoy outdoor recreation together?
9. How should we take care of public property when we are on excursions?
10. What are the most beautiful things we can see on our drives and walks?

Activities

1. Encourage the children to tell about the good times they have with their family and alone.
2. Observe and discuss pictures relative to good times (on the bulletin board and reading table).
3. Tell about favorite toys. Bring some to school. Have a doll day, mechanical toy day, etc. Make reading chart stories about these.
4. Visit the library and learn how to take out books.
5. Illustrate recreational activities, using paint, crayon, cut paper, clay.
6. Learn how to have good times singing.
7. Learn to play singing games.
8. Make rules for behavior at playgrounds and parks. Practice these at an excursion to one of these places.

9. Read a favorite story to the class out of a library book or reader.
10. Make covers and book marks for home reading.
11. Make a picture book for a younger brother or sister.
12. Make good citizenship posters related to recreational activities.
13. Make hand craft articles, learning skills which may be continued as leisure activities in the home.
14. Learn several games which could be played at home. (Games one or two might play. Quiet games. Noisy ones.)
15. Make simple toys and games to take home. (Stocking dolls are easy to make.)
16. Give a puppet show which tells how the family has a good time.
17. Have a toy parade to another room showing toys the children have made. Each child may tell something about his toy and how it was made.

GRADE TWO

CENTER OF INTEREST—LIVING IN THE LOCAL COMMUNITY

UNIT I. COMMUNITY HELPERS WHO PROVIDE SHELTER FOR THE FAMILY

Overview

All the people of the community need places in which to live, but only part of them work at making these shelters. The others work at something else, and when they need new houses, they pay the builders to make the houses for them. This unit will consider the work of those who build and maintain the homes and other buildings of our local community.

Objectives

1. To gain information about the work of those who build and keep up the houses of the community.
2. To gain some idea of the different types of buildings which house the people of any community.

3. To begin to appreciate the number of services rendered by the builders in a community.
4. To begin to learn the responsibilities of people who use community buildings.
5. To gain some understanding of the interdependence of the different workers in the community.

Problems for Developing the Unit

1. What buildings are needed in a community?
2. How is each building especially adapted to its use?
3. How does a family get a house for a home?
4. What workers have a part in building a home? How is their work done? (Real estate agent, architect, contractor, carpenter, carpenter's helper, brick layer, hod carrier, stone mason, plumber, electrician, painter, paper hanger, welder, riveter, excavator, etc.)
5. What workers help to keep our houses in good condition and repair throughout the year?
6. What materials are used in building houses in our community?
7. What community workers help to make the house healthful and safe? How is their work done?
8. What workers help to make our houses more beautiful?
9. How do the building workers help others in the community and how do others in the community help them?

Activities

Approach

1. Look out school window to see different kinds of buildings.
2. See pictures and films about houses, workers, and communities.
3. Take a trip to a business section to see different kinds of buildings.
4. Make a trip to see a house under construction. Go at intervals to see the progress and the different workers.
5. Interview the different workers.
6. Study an airplane map of the community if one is available.

Informational

1. Read about the building of houses and the work which is done.
2. Consult advertisements in newspapers for information.
3. Make reading charts about building workers. Read as the occasion arises.
4. Visit a hardware store to learn what materials and tools the store keeper provides for building and equipping houses.
5. Make an excursion to visit a furniture store.
6. Consult architect's blueprints just to see uses of drawing.
7. As each building helper is studied have an exhibit of his tools.
8. Handle some of the workers' tools to see how hard it is to use them skilfully.
9. Learn what colors houses are painted.

Expressional

1. Discuss and write about what was seen on the excursion to see a house being built.
2. Make up riddles about workers and buildings.
3. Draw pictures of tools used by the different building workers. Make them into a booklet of tools used by workers.
4. Draw pictures of houses in the community.
5. Draw pictures of workers seen on excursions.
6. Draw simple floor plans of houses the pupils have seen.
7. Make jig saw puzzles of different buildings.
8. Show, by pictures from magazines and newspapers, how houses are lighted and heated.
9. Learn or compose songs about some of these workers.
10. Using boxes, either wood or cardboard, arrange a play community on the floor of the school room.
11. Dramatize the actions of the workers in building houses.
12. Construct miniature houses of wood, brick, stone, adobe, etc.
13. Make blocks of cement.

Evaluational

1. Have an exhibit of the houses, other construction work, drawings, and house plans. Have children explain what each represents, how it was made, and how it is similar to the building of a real house which they have observed.

Culminating

1. Show a child-made movie about workers who build, repair, and furnish houses.
2. Have a play about the building of a house, with carpenter, painter, paper hanger, etc., represented.

UNIT II. COMMUNITY HELPERS IN THE SCHOOLS**Problems for Developing the Unit**

1. What are some kinds of work that need to be done in schools?
2. What people do these necessary things?
3. What is the work of the teachers?
4. What is the work of principal, supervisors, and superintendent?
5. What is the work of the custodian?
6. What workers keep our building in repair?
7. What workers bring things that are needed, such as coal?
8. What people in the community help school children keep healthy? What do they do for us? (Doctor, dentist, school nurse, etc.)
9. What people make our school more safe?
10. How do parents help our school?
11. How do librarians help pupils of our school?
12. How do school helpers get ready for their work?
13. How can the children help each of these workers?

Activities

1. Make an excursion through the school to notice what work the different people are doing.
2. Invite the school nurse to tell about her work.
3. Ask a parent to tell how the PTA or other parent group helps the school.
4. Ask a policeman or fireman to talk to the class on safety.
5. Interview each worker in the school to gain information about what work he does and why.
6. Make list of things teachers, principal, and other school helpers do.

7. Read stories about schools and school life in readers, social studies books, and other sources.
8. Volunteer to do something which will assist the school workers. (Care of flag, halls, school grounds, etc.)
9. Organize to act as hosts for room each day.
10. Organize a plan to care for books belonging to room library, for paste and other supplies.
11. Look at teacher's daily register to see what she must know about each child.
12. Make pictures, poems, and songs about the school's helpers.
13. Act as hosts at a PTA meeting. (Act as ushers, decorate room, serve simple refreshments, etc.)
14. Give a simple dramatization in which the children take the parts of the various school workers and show what they do.

UNIT III. COMMUNITY HELPERS WHO PROTECT THE FAMILY

Problems for Developing the Unit

1. What are some of the ways in which families need protection?
2. How do policemen help the family?
3. How do firemen help to protect the family?
4. How do doctors, dentists, nurses, and health officers help the family?
5. How do some animals help protect the family?
6. In what ways can neighbors help protect each other?

Activities

1. Arrange a bulletin board to show protective helpers at work.
2. Arrange reading table with books that have stories about these helpers.
3. Make a bibliography of stories about these helpers.
4. Interview some of the protective workers to find out how they carry out their work.
5. Make a survey of possible dangers in the community by means of anecdote, newspaper stories, and movies (such as safety pictures).

6. Ask some of the protective workers to come to school to tell about their work.
7. Make a trip to the nearest fire station to learn about the work and equipment of the firemen.
8. Read social studies books and readers to get as much information as possible about the services of these workers.
9. Write a letter asking permission to visit a fire station and follow with a letter of appreciation.
10. Have an exhibit of toys or clothes the children have that relate to these helpers.
11. Write or tell why some of these protective workers have to see that everyone obeys certain rules. Discuss which rules are especially important for boys and girls to obey.
12. Dramatize incidents which show the work of policemen, firemen, and health officers.
13. Draw or paint pictures of these workers or model them with clay.
14. Make a fire station, using toy and hand-made firemen and equipment. (Ladders, engines, axes, hose, bells, hydrants, etc.)
15. Make reading charts about animals who help to protect the family.
16. Learn or compose songs about the fireman and policeman.
17. Listen to music about them.
18. Make a frieze showing the work of policemen, firemen, doctors, nurses, etc., in the community. The frieze may be about one or all of these types of workers.
19. Have a dramatization in which each of these workers is asked about his work and has a chance to explain it. This would review the unit and culminate it. The explanation could be more action than words.
20. Give a puppet play (stick or hand puppets) showing how boys and girls may help the community workers who protect the family.

UNIT IV. COMMUNITY HELPERS WHO PROVIDE FOOD FOR THE FAMILY

Problems for Developing the Unit

1. Where does mother or father go to get foods for meals?

2. How does the grocer help in providing food for the family?
3. How does the butcher supply us with food?
4. What are the services of the dairyman and the milkman?
5. What help does the baker give?
6. What foods do we get from the vegetable man?
7. How do the farmers help?
8. How do the workers in food canning factories and other food factories help?
9. How do railway workers, truck drivers, and others who transport food help in providing food for the family?
10. How do restaurant workers help provide food in the community?
11. When do we get food from the popcorn man? (At the movies, fair, circus, etc.)
12. What special things does each food helper have to know?
13. What kinds of services do we expect of each helper?
14. How can we tell good food from bad?
15. How does the community protect people from bad food?
16. What kinds of food are sold in cans, in bulk, by the dozen, by the pound, and by the quart?
17. Which of our foods are produced in this community?
18. How can we help produce food?
19. How can we help save and take care of food?

Activities

1. Bring small quantities of suitable foods and empty containers to school. Find out what workers helped in the production and distribution of these foods.
2. Visit places in the community which produce, manufacture, transport, or distribute food. (Creamery, bakery, grocery, farm.)
3. Read stories about the people who provide the family with food.
4. Examine bills for foods and cards for having the milkman leave milk.
5. See pictures and films on foods and food workers.

6. Make pictures of food and food helpers.
7. Make a play grocery store and stock it with empty cartons and cans. Fruits and vegetables may be modeled from clay. Make price tags and labels. Play store: take orders, buy and sell, weigh and measure, make change, deliver goods. Dramatize activities.
8. Place a jar of canned tomatoes beside a few fresh tomatoes and leave them until the unprotected ones spoil. Sugar and a sugar beet could be left out, too.
9. Weigh and measure by pound, dozen, half dozen, pint, and quart certain ordinary foods.
10. Make a collection of containers of different sizes and weights.
11. Learn songs and singing games about the helpers who produce our food.
12. Encourage creative activity in the way of songs, poems, or dramatization.
13. Have a school fair in which food produced in the community is exhibited and labeled. (Emphasize the helpers involved.)
14. Bring food used in the homes of the community and tell where it came from, how it got there, and who helped in getting it to the home. (Could be done for another class or parent visitors.)

UNIT V. COMMUNITY HELPERS WHO PROVIDE CLOTHING FOR THE FAMILY

Problems for Developing the Unit

1. What clothing do we need?
2. How is our clothing different in the various seasons of the year?
3. Which people in the community help us to get our clothing?
4. What articles of clothing are made in the community?
5. What workers, who are not in our community, were needed to produce our clothing?
6. What animals help to provide us with clothing?
7. What community workers help to keep our clothing clean and in good repair?

Activities

1. Make an excursion to a shopping center to notice the different stores that furnish clothing. Ways of choosing, fitting, measuring, and selling could be observed in some stores.
2. See pictures and films about the preparation of clothing.
3. Make reading charts about the different kinds of workers who supply us with clothes. Make others about sheep and other animals who help provide clothing.
4. Read about clothing helpers (people and animals) from readers and social studies books.
5. Read advertisements in newspapers telling places to buy different articles of clothing.
6. Make a list of articles in a wardrobe and where to go to buy them.
7. Find out about tools used by workers in making our clothes and keeping them clean.
8. Make looms for weaving from small wooden boxes and weave a piece of cloth from coarse thread, yarn, or string.
9. Construct a clothing shop. Make all kinds of clothing for children (life size) of wrapping paper. Label and mark sizes and prices. Make jewelry of clay and other materials. Play buying and selling the clothing.
10. Make and dress simple dolls.
11. Bring or wear many kinds of clothing. Children might tell what they had learned about helpers who provided this clothing—for an audience or for each other.
12. Demonstrate the kinds of clothing appropriate for certain types of weather—in connection with health study.
13. Make a child-made movie of the story of a dress or coat, showing how it was made, the workers involved, and how it was finally used. Show the movie to the parents or another class.

UNIT VI. HOW COMMUNITY HELPERS PROVIDE RECREATION FOR THE FAMILY

Problems for Developing the Unit

1. Where do you go away from home to have a good time?

2. How do our neighbors and relations help us have a good time?
3. What people help to provide playgrounds, libraries, moving picture theaters, swimming pools, etc., for us?
4. What do playground instructors do?
5. What is the work of the librarian?
6. What people work at the moving picture theater?
7. What people work at swimming pools?
8. How are our health and safety protected while we are at play?
9. Which people help provide music and art in our community?
10. What people provide plays other than films?
11. How can we help the people who provide recreation in the community?
12. What things could we do to provide recreation for others in the community? For the smaller children? For sick and aged people?
13. What are some of the things we can do this summer for vacation fun?

Activities

1. Look at books in the classroom showing children having fun together.
2. Visit the library to become acquainted with the people who work to make this pleasure possible (librarian, custodian, etc.). Explore facilities for enjoyment in the library.
3. Visit a park, playground, or zoo to discover what people work there and what they do. What things are provided for our enjoyment?
4. Visit a moving picture theater to learn about the people who operate it and their work. See a film while there.
5. Visit a radio broadcasting station to hear a favorite program broadcasted. Find out what people were necessary to produce the program.
6. Write letters asking permission to visit a theater or other place of interest in the unit and follow up with letters of appreciation.
7. Make reading charts about types of recreation in the community and the men who provide them.

8. Write stories about animals seen at the zoo and illustrate them for a class book.
9. Plan an hour's fun with neighbors.
10. Make picture books, toys, and puzzles for younger children in the pupils' homes, in hospitals, or in nursery schools.
11. Read stories about children having fun which include something about the community workers involved.
12. Tell stories from interesting pictures showing children having good times in the community.
13. Draw pictures of fish, flowers, animals, and trees observed in the parks.
14. Make plans for having summer fun together.
15. Learn games that one or a few can play.
16. Show a child-made movie about "Fun We Have in Our Town" and be sure to include the community helpers who make this possible.

GRADE THREE

CENTER OF INTEREST—LIVING IN THE WIDER COMMUNITY

UNIT I. TYPES OF COMMUNITIES

Overview

After the child has become acquainted with the home and school as well as the local community, the next interest is the wider community. In this unit about types of communities—city and country, a knowledge of the existing environmental differences and the reasons for their growth should be gained. The child should become aware of the cooperation necessary for the interdependence of city and country communities.

An elementary understanding of the effects of these differences upon the educational, recreational, cultural, religious and family life of the people in both the city and country communities should be realized. A study of different types of communities should include the development of an appreciation for the historical background of the locality. Those city and rural communities nearest the local community should be given most attention in this unit.

Objectives

1. To awaken an interest in the close relationship of daily activities in city and country communities.
2. To acquaint the child with the ways of living in the city and in the country.
3. To develop an attitude of understanding and appreciation of the existing differences in city and country communities and how these differences affect the lives of the people.
4. To develop a clearer understanding of the truth that everyone must contribute to insure the happiness and welfare of all.

Problems for Developing the Unit

1. What makes up a community?
2. What kinds of communities do you know in Colorado?
3. What are the similarities and differences between city and country communities which you know?
4. What factors such as climate, location, soil, water supply, industries, and people contribute to and control the growth of the community?
5. How do the communities provide for the safety, health, property, recreation, and education of their people?
6. How do the different communities in our locality compare as to houses, schools, ways of making a living, recreation, etc.?
7. How do the environmental differences of the city and country communities affect the daily activities of the people?
8. How do animal and plant life help us in our community, and how are they protected?
9. What do we do to make our community a desirable place in which to live?

Activities

Approach

1. Arrange a bulletin board of pictures of city and country activities to create interest and stimulate discussion of city and country life.
2. Read a story to the class which is built around life in the city and in the country.
3. Put a book about city and country life in a conspicuous place.

4. Lead class to develop an interest in the unit by a series of skillful questions coming from such sources as: our food supply, care of animals, how the city and country serve their people, our homes, the fuel we burn, the clothes we wear, the way we travel.
5. Have a person from each type of community talk to the group and answer questions of the children.
6. Discuss the question: How does our community look from an airplane? This should lead to making a floor or wall map of the community.

Informational

1. Find out about life in your community in earlier times and contrast with the community today.
2. Take trips to make a survey of farming communities and to observe city communities. Take photographs of some of the characteristic streets and buildings.
3. Study city and country catalogs and magazines to find out different equipment needed.
4. Take a trip to a library to find reading material on city and country living. Write to the State Library for additional material.
5. See films on life in city and country communities.
6. Read stories about children living in each type of community.
7. Have children tell about their experiences in city and country. (Auto trips, hikes, etc.)
8. Make a collection of poems dealing with city and country life. Read them aloud or recite in the choral speaking manner.
9. Bring small farm animals to school.
10. Find out how traffic problems differ in city and country.
11. Practice safety first rules in a play community constructed by the children. Follow the same rules in going to and from school.
12. Discover and discuss how fire protection of each community differs.
13. Visit a post office to find out where located, what happens inside, how mail is taken to the rural communities, and how it is delivered in the town.

14. Study methods of keeping the city clean: sewer and garbage disposal, street cleaners, water supply, etc. Compare with methods used in the country or small village.
15. Find out how the city school compares with the country school. Find out about the means of transportation needed by both types of school.
16. Find out why farm houses differ from city houses.

Expressional

1. Trace trips on floor or wall map. Lay out village streets, roads around school or farm visited to gain sense of location.
2. Discuss class excursions, utilizing the maps made.
3. Write letters asking permission and letters of appreciation to people whose farms, homes, or places of business are visited.
4. Make two booklets—one for country and one for city activities—with stories and pictures to illustrate.
5. Collect pictures of kinds of houses city and country people live in, as farm houses, double houses, apartment houses, bungalows, and cottages.
6. Make a collection of pictures of farm buildings: barn, silo, tool house, and dairy buildings.
7. Make a collection of pictures of buildings used in towns: stores, markets, schools, libraries, theatres, and churches.
8. Build a small community in which children can play and organize the information they are gathering.
9. Construct a play post office and plan on the floor map a rural mail route.
10. Build mail boxes for the model community and use them in the distribution of letters written by the children to each other.
11. Play at carrying on the life of the farm or city groups.
12. Make a list of farm animals and their use and care. Draw pictures of them.
13. Lay out a park for a rural community or a city. Build a park in a sand tray and grow real flowers or plants in it.

14. Reproduce through much dramatization the experiences gathered through trips, books, discussions, and reproductions of community life. Use dramatic play, hand puppets, stick puppets, shadow puppets, rhythmic interpretation, or creative dramatization.
15. Plan a day for a boy or girl in the city and in the country. Report this as a page in a diary.
16. List daily activities of people living in the city and in the country.
17. Compare the sports and games of boys and girls in city and country communities. Play some of each type.
18. Write a story telling of the daily activities of boys and girls in each type of community.
19. Write original stories, riddles, rhymes, and songs about city and country life.
20. Plan a play school for a community. Lay out playground space and plan the landscaping.
21. Make a list of the contributions of all nationalities living in the community, as, Italian truck farmers.
22. Make a frieze of the different types of buildings found in the city community.
23. Make a diorama of the different kinds of buildings found in the rural community, or of a farm scene.
24. Illustrate in crayon, cut paper, or paint, stories read about city and country activities, to be put into class books.
25. List and discuss the clothing problems of the family and the community: kinds of clothing suited to climate and to different occasions, sources of clothing, and the care of clothing.
26. Make a booklet of drawings showing the differences between the clothing we wear now and that worn by people long ago in our community.
27. Make a dictionary of terms learned in this unit. Illustrate where possible.

Evaluational

1. Have a library period in which each child presents a good book on city and country life about which he will tell something to create interest in further reading by others in the class.

2. Question Box. Each child presents a written question to be answered in discussion. Each child draws out of the box a question which he is to answer. (This activity needs careful planning.)
3. Objective type test such as word matching, true-false sentences, rearrangement of sentences in correct sequence of ideas, picking out incorrect ideas in sentences of fact on types of communities, simple underlining of main points in paragraphs, summarizing main points of the unit.
4. Pupil Record. An individual card for each child on which he records for himself what he has done each day toward the development of the unit. (Reading, construction work, art work, bringing materials, locating information, etc.)

Culminating

1. Prepare a program on "What I Learned About City and Country Life." Use original dramatic sketches, puppet play, or child-made movie.
2. Plan an assembly program to include dramatization of the life of children in a city and a country community. Read poems, give talks, tell stories, and sing songs relating to the unit.
3. Exhibit a frieze, poster, diorama, or textile wall hanging, expressing ideas about city and country communities.
4. Hold an exhibit of work carried on in the city and country unit. Show play community built, collection of pictures and material, original rhymes and stories about city and country life, etc.

UNIT II. HOW COMMUNITIES HELP EACH OTHER

Problems for Developing the Unit

1. What do we use in our homes which our community does not produce? (Food, clothing, shelter, recreation.)
2. In what communities are these things produced?
In what Colorado communities?
In what other United States communities?
In what communities of other lands?

3. What other products and materials does our community obtain from away?
4. What does our community produce which is sent to other places?
5. How do we exchange our products for those of other communities?
6. How do city and country communities help each other?
7. Why do people from other places come to visit our community and state?
8. How may schools in different communities help each other?

Activities

1. Read stories about how different communities help each other.
2. Collect samples of articles that are manufactured in cities from raw materials from farms, such as sugar from sugar beets, flour from wheat.
3. Ask a grocer to speak to the group to tell the children how and where he gets his vegetables and fruit.
4. Plan a trip to any inter-community firm such as a creamery, a poultry market, a vegetable market, etc.
5. Discover and discuss problems involved in the interdependence of communities, such as:
How do farmers bring their produce to market?
What things that we use are grown in our community?
In other communities?
What does the farmer need that is produced in the city?
What does the man in the city use that is made in the country?
6. Visit a dairy, bakery, greenhouse, truck farm, market, or factory, if possible, in order to understand the cooperation needed in our lives.
7. Locate on a map, sources of food, clothing, shelter, and recreation.
8. Express ideas with crayons or tempera about communities helping each other. (Use for an exhibit.)
9. Make a scrap book of pictures, either free hand or collected from magazines and newspapers, on how communities help each other.

10. Design and build a play market.
11. Plan a meal of typical Colorado foods. Which were produced in the local community and which came from other communities in the state? Cook one of the dishes and serve at school.
12. Make a collection of grains raised on a farm and things made from these grains in factories in the city.
13. Summarize a list of ways in which communities help each other.
14. Make a chart of the variety of food your community provides.
15. Make illustrated lists of food, clothing, shelter, recreation, which is furnished to us by other communities.
16. Exhibit material gathered from tourist bureau, advertising the community and state.
17. Give a play showing how produce is exchanged (store, market, etc.).

UNIT III. MAKING A LIVING IN THE COMMUNITY

Problems for Developing the Unit

1. How do people in our community make a living?
2. What kinds of work do our fathers and mothers do?
3. Do they work at home or at some other place?
4. What do people in the country and in the city do for a living?
5. How does the weather affect different kinds of workers?
6. What kind of tools do they use?
7. How does the work of the men of our community help it grow?
8. What is my job in the community?

Activities

1. See a film about ways people make a living or about some one industry.
2. Prepare a bulletin board showing people at work. Discuss these pictures.
3. Take excursions to factories and plants found in both city and country communities.
4. Invite people from factories to answer questions and to discuss ways of making a living in the communities.

5. Find and read stories of foods: wheat, corn, sugar, fruits and vegetables. Where possible observe the products growing in the fields and then being changed in the factory to food used in the home. Example: Visit a sugar beet field and then a sugar factory after the stories have been read.
6. Study the primary occupations in relation to community needs as: mining, lumbering, farming, fishing, and manufacturing.
7. Plan a play bringing out the place of the child in the work of the community.
8. Make a frieze illustrating the community at work. Use paper or textile for the background.
9. Make a booklet of free hand crayon or cut paper work, "Who is Who in the Community", representing all kinds of work in the community.
10. Make a booklet of "What is What in the Community", illustrating materials and industries found in the community.
11. Make a pop-up book of "What I Do in the Community", showing the job of the child in the community.
12. Have a discussion of things learned about making a living.
13. Make a chart listing raw materials and then finished products from the factories.
14. Discuss and list the variety of products that the community produces.
15. Present a play showing "My Job in My Community".
16. For a program prepare a shadow play of "Making a Living in Our Community."

UNIT IV. TRANSPORTATION IN THE COMMUNITY

Problems for Developing the Unit

1. How do the members of our class get to and from school?
Other places?
2. What are the most common means of travel in our community?
3. What animals are used for transportation in this community?
4. What machines are used for transportation in this community?

5. By what kinds of mechanical power are these machines driven?
6. In what ways are people and goods transported from one community to another in Colorado?
7. To what extent has transportation been developed in Colorado?
8. What and where are the main lines of travel in Colorado?
9. How is our community connected with the main lines of travel?
10. Trace the history of the development of transportation in this state.
11. In what ways does our community depend upon transportation?

Activities

1. Discuss and illustrate how pupils get to and from school.
2. Read stories and collect pictures of past and present modes of transportation.
3. Visit a train depot, an airport, or a bus station.
4. Secure state maps from filling stations. Have committees select an early or modern mode of transportation and plan an imaginary trip through different parts of Colorado.
5. Make a chart on the blackboard and fill in with types of transportation observed, such as trucks, wagons, bicycles, automobiles, and busses. Include walking, running, skating, etc.
6. Keep a list of all out-of-state licenses observed.
7. Make models of early methods of transportation.
8. Make a picture show of early transportation and tell the story of the history of transportation.
9. Trace the development of transportation in soap or clay figures.
10. Make a textile wall hanging showing the modes of modern transportation.
11. Make a scrap book of pictures of streamline vehicles.
12. Make a railroad terminal on a work table. Bring toy models owned by the children.
13. Construct a child-size airplane, street car, or play automobile.

14. Prepare an oral discussion on "What I Learned about Transportation."
15. Have an exhibit of models and illustrations made, at an assembly program. Pupils may give explanations of these.

UNIT V. COMMUNICATION IN THE COMMUNITY

Problems for Developing the Unit

1. What methods of communication are used in our school?
2. By what means do people communicate with each other in this community?
3. How do animals communicate?
4. How is communication dependent upon language?
5. How do people who do not speak the same language communicate with each other?
6. What languages are spoken in this community?
7. How is the community dependent upon communication?
8. To what extent have means of communication been developed in Colorado? Trace their history.

Activities

1. Take the class to the library to find material and pictures on communication, past and present.
2. Build up a list of observed means of communication used in the community.
3. Bring a typewriter to class and demonstrate its use.
4. Read stories and study pictures on the history of communication.
5. Plan excursions to the post office, telegraph office, telephone office, newspaper office, radio station, moving picture theater, or commercial photographer.
6. Study a map of modern air routes.
7. Go with the postman on a part of his rounds. Observe mail trucks and mail trains.
8. Write letters to be sent through the mails and through a play post office. Discuss cost and different denominations of stamps and the use of the money obtained from stamps.

9. With play telephones, learn good speech techniques for telephoning.
10. Learn what broadcasting stations can be heard best in your community. What types of programs can be heard?
11. Listen to various types of radio programs at school. (Bring portable radio to school if necessary.)
12. Make a collection of pictures showing different kinds of communication.
13. Make a collection of all kinds of pens, pencils, crayons, etc.
14. Make a quill pen.
15. Make a collection of different kinds of books. Note contrasts.
16. Make a frieze showing the development of communication.
17. Edit and publish a class newspaper or magazine. (Mimeograph or duplicate.) Keep it simple and made up of children's original writing and reporting.
18. Build up a special vocabulary of terms used in communication and be able to identify words with objects.
19. Write short, simple biographies of great men in the field of communication.
20. Plan a play about the lives of inventors of communicative instruments, as Bell, Edison, etc.
21. Have an exhibit of models, pictures, and other materials related to the unit.

UNIT VI. INDIANS OF COLORADO AND THE SOUTHWEST

Problems for Developing the Unit

1. What tribes of Indians lived in Colorado? In the Southwest? Which ones live in these regions today?
2. What kinds of homes did these Indians have?
3. What kind of food and clothing did they have? How did they get them?
4. What kind of tools and weapons did they use?
5. How did they travel?
6. What kind of religion did they have?
7. How did the Indian tribes of the Southwest differ from each other?
8. What part of the work of the tribes did the men and the women do?

9. How did the climate of Colorado and the Southwest affect the lives of the Indians?
10. What kind of music, dance, and art did the Indians have?
11. What records did they have? What legends did they tell?
12. How do the present-day Indians of Colorado and the Southwest differ from those of long ago?
13. What contributions have these Indians made to our present-day community and home living?

Activities

1. To arouse interest in Indians, show objects and pictures of early and present Indian life.
2. Place pictures of primitive modes of shelter and primitive life around the room. Use models, if obtainable.
3. Introduce the study of Indians through questions such as:
Why didn't the Indians have wooden houses?
How did the Indians make flour?
How did the Indians make things before they had tools like ours?
Have any of you been to Mesa Verde?
4. Take trips to see relics of primitive life in museums or in the community itself.
5. If any Indians live in the community, invite one to talk to the class.
6. Read books and stories about Indians.
7. See a good Indian film.
8. Find out about clothing of Indians through reading in books and looking at pictures. Study museum exhibits.
9. Study Indian designs and apply them to modern uses.
10. Take a trip to the woods and play Indian.
11. Make pottery or model dishes in the manner used by the Indians.
12. Make katchina dolls; weave blankets and rugs.
13. Grind grain with a real Indian mortar and prepare an Indian meal.
14. Make a list of Indian words and names.
15. Make a fire with a flint or by friction process

16. Have the children originate a guessing game using the Indian sign language.
17. Make a collection of Indian foods such as potatoes, pumpkins, corn, acorns, and maple sugar.
18. Collect gourds and make Indian utensils from them.
19. Sing Indian songs. Play records of Indian music.
20. Write a story in Indian picture language. Send a message in Indian sign language.
21. Work out a simple Indian pageant using dances, costumes, and musical instruments made by the children.

GRADE FOUR

CENTER OF INTEREST—COMMUNITY LIFE IN OTHER LANDS

UNIT I. COMMUNITY LIFE IN COLORADO

Overview

This unit on Colorado not only introduces the child to some of the different types of communities within his state, but also provides a comparative basis for the study of various kinds of community life in other lands.

Objectives

1. To make the life and problems of the various types of communities in Colorado more vivid and understandable to the child.
2. To develop within the child civic pride in connection with life in his community and state.
3. To develop understandings of similarities and differences between communities in other parts of the world and our own.

Problems for Developing the Unit

1. What types of farming communities do we find in Colorado? (Trade center, village, small town.)
2. Describe some of the smallest types of communities found in Colorado. (Crossing, center, station, corner, etc.)
3. Describe some of the larger types of communities in the state. (Large towns, small cities, large cities.)

4. What types of communities do we find in the arid parts of our state? In the mountains? On the Eastern Slope? On the Western Slope?
5. Where are the irrigated sections and what kinds of communities are found there?
6. What are some of the important manufacturing communities of Colorado? What do they produce?
7. What kinds of resort communities are found in Colorado? Where are they located?
8. What mining communities are important in Colorado today? Which were more important in the past?
9. Where are the college communities located? What kinds of colleges and universities are found in them and what is the nature of these communities?
10. In which communities or types of communities is most of the government business transacted?
11. Compare the kinds of food, clothing, shelter, and recreation characteristic of these different types of communities.
12. Why are there so many types of communities in Colorado?
13. What are some of the cultural contributions of Colorado communities? (Miners' songs, cowboy ballads, play festivals, Western poems and stories, art, Western square dancing, antiques, historic places and customs.)

Activities

Approach

1. Arrange a bulletin board exhibit of pictures of typical Colorado communities: mining town, trade center, summer resort, winter resort, manufacturing center, the capital.
2. Make an excursion through the local community to study its characteristics and to determine its type.
3. Make excursions to other types of communities.
4. See a film of Colorado scenes, showing various types of communities.
5. Study the state flag, song, bird, tree and flower. Discuss why they were chosen or developed.

Informational

1. Study maps to locate different types of communities.
2. Read various references about communities in the state.

3. Collect representative materials, products, and pictures of various types of communities.
4. Have people who have lived in different parts of the state discuss the various types of communities.
5. Write to Chambers of Commerce, to business firms, and other sources for descriptive information and materials about the different types of communities.

Expressional

1. Make reports on readings and observations about Colorado's communities.
2. Read stories or poems about Colorado or written by Colorado authors.
3. Have the class discuss interesting information learned through excursions and reading about the problems for developing the unit.
4. Encourage spontaneous plays and dramatic play about community life in Colorado.
5. Write reports on material gathered for any one problem.
6. Write original poems or songs about life in Colorado.
7. Record results of excursions in a class book. Make illustrations and use photographs taken on the trips.
8. Write invitations and thank-you letters. Write letters asking permission to visit.
9. Learn simple Western dances.
10. Draw a large wall map of the state and print names of the communities studied. Use a color or symbol to indicate the type of each community.
11. Make models of various types of communities.
12. Make a diorama of Colorado towns, showing a cross section of the state, in a series of cardboard boxes. These might be attached to the map by using colored string.
13. Construct a winter resort scene, with a ski tow.
14. Construct a souvenir shop, such as would be found in a resort town, and make typical hand craft articles for its displays.
15. Draw pictures of kinds of people found in various types of Colorado communities: miner, cowboy, skier, skater, mountain climber, college student or professor, factory worker, farmer, government official, etc.

16. Make a class book of pictures and stories about types of communities; their people and activities.

Evaluational

1. Have a map drill to locate communities that have been studied.
2. Make oral or written reports based on study during the unit.
3. Participate effectively in class discussions.
4. Take objective tests on information and understandings about Colorado communities.

Culminating

1. Give a play for the parents based on Colorado communities: their activities and people.
2. Have an exhibit of art work, booklets, dioramas, maps, and other interesting things collected or made during the unit.
3. Have an open house at the souvenir shop and entertain the visitors with songs, stories, dances, plays, and refreshments.
4. Give a Western type square dance and invite the parents to participate. Include exhibits of pupils' work, the souvenir shop, and typical Colorado refreshments.

UNIT II. COMMUNITY LIFE IN A MOUNTAINOUS COUNTRY—SWITZERLAND

Problems for Developing the Unit

1. How does life in Swiss communities compare with the mountain towns and villages of Colorado?
2. Why are both Switzerland and Colorado called playgrounds?
3. How does the elevation of the Alps compare with the Rockies? Compare the passes, timberline, snow line, peaks, glaciers, lakes, and rivers of the two regions.
4. What type of climate is found in Switzerland?
5. How have the location and surface of Switzerland affected its life and history?
6. Compare the community life of a Swiss village with that of a small town in the mountains of Colorado.
7. Compare your home, school, food and clothing with that of a Swiss boy or girl.

8. How does a Swiss father provide for his family?
9. What products are raised on Swiss farms?
10. What products do we sometimes obtain from the Swiss mountain regions?
11. How well have the Swiss used their natural resources in the alpine part of the country? (Forests, water, water power, soil, etc.) Compare with the conservation of these resources in the Rockies of Colorado.
12. What are some of the outstanding characteristics of the Swiss people?
13. What means of transportation and communication do people in Swiss mountain communities have?
14. What provisions are made by the Swiss for safety in the mountains? (Guides, alpine stocks, ropes, picks, signs, St. Bernard dogs, Red Cross.)
15. What are some of the leisure time activities in which the Swiss people engage? Which do we have in Colorado?
16. What kinds of music, art, and dance do we find in a Swiss village?

Activities

1. Class discussion following the study of types of communities in our own state will rather naturally bring about interest in communities in other parts of the world that are similar.
2. Discuss a bulletin board exhibit of pictures about Switzerland with questions posted below the pictures.
3. Study maps of Colorado and Switzerland and make comparisons.
4. See a film showing the life and people of Switzerland.
5. Hear a recording of a Swiss yodeler.
6. Invite someone who has been in Switzerland to come to tell about the country and its people.
7. Collect travel folders, pictures, and articles about Switzerland.
8. Read texts, reference books, and magazines to learn more about Switzerland.

9. Read stories to learn more about the life of the people.
10. Find out about the service of the St. Bernard dogs and report to the class.
11. Have class discussions of the problems listed for developing the unit.
12. Make reports on reading to the class. Make these more interesting through illustrations, models, or products.
13. Read or tell stories about the Swiss to the class.
14. Write letters to get folders about Switzerland.
15. Write letters to Swiss school children. (Get addresses from the American Junior Red Cross, Washington, D. C.)
16. Write original stories about the children of the Alps.
17. Write poems about Switzerland.
18. Dramatize stories that have been read.
19. Carve wooden toys in the Swiss manner.
20. Enjoy music of Switzerland. Sing songs and listen to recordings.
21. Learn to yodel.
22. Learn to do some Swiss folk dances.
23. Make a pop-up book about Switzerland.
24. Make a Swiss farm in the corner of the room.
25. Learn to knit and make lace.
26. Make butter the way a Swiss farmer would.
27. Make finger paintings of Swiss scenes.
28. Make a small Swiss chalet.
29. Construct a Swiss scene showing mountains, valleys, passes, timber line, snow line, pastures, flowers, forests, waterfall, tunnel, village, chalet, or farm.
30. Make a frieze showing a scene or scenes from books about Switzerland.
31. Invite parents or children from other rooms to visit the Swiss farm. Serve the butter, that was made by the children, on crackers. Give the Swiss dances that have been learned, in simple costumes. Display interesting things that have been collected or made.

UNIT III. COMMUNITY LIFE IN A HOT, DRY COUNTRY—THE SAHARA

Problems for Developing the Unit

1. What factors make the Sahara a desert?
2. Why is an abundance of life impossible in a desert?
3. In what ways are the climate and surface of this region different or similar to the drier parts of Colorado?
4. What kind of people live in the Sahara?
5. What kind of community is an oasis? (Palms; flat-topped, mud-brick houses; water; gardens; trading places.)
6. How does the climate affect life in the oasis? (Food, clothing, shelter, recreation, transportation, plants, animal life.)
7. What commercial products are raised or traded? (Dates, hides, jewels, metals, ivory, nuts, etc.)
8. Who are the nomads who come to the oasis? Why do they come? How do they live on the desert?
9. What kind of schooling do children in an oasis receive?
10. How do people travel from one oasis to another on the desert?
11. What plants and animals are found in or near the desert oases?
12. What modern influences have come to some of these desert communities?
13. What contributions have the people of these oases made to the world of the arts? (Weaving, designs, dances, music, literature.)
14. Contrast life in these oases with that in your own community.

Activities

1. Discuss other communities that have been studied and lead the discussion into a study of the community life on a desert.
2. Display interesting pictures and books of life on the Sahara.
3. See a good film, showing life in an oasis on the Sahara.
4. Discuss the camel as a helper in a desert community.

5. Locate the Sahara on a map and discuss its surface features, size, latitude, and climate. Why aren't there more cities indicated?
6. Read texts, supplementary books, and stories of life in the desert.
7. Study pictures, maps, and travel folders.
8. Have class discussions of what has been learned through reading.
9. Visit a museum to study collections of objects from the Sahara.
10. Make a list of foods we get from the Sahara.
11. Encourage dramatic play about riding a camel, weaving, and various other activities of the oasis.
12. Read good stories about the way these people live.
13. Make lists of new words and play games with them.
14. Write original stories of oasis or nomadic life.
15. Write a description of a ride on a camel.
16. Sing songs and enjoy recorded music of the desert.
17. Make a picture book of animals, birds, and reptiles of the desert.
18. Experiment with amounts of water needed for different plants: cactus, yucca, potato, morning glory, etc.
19. Make a cactus garden in a bowl or decorated coffee can.
20. Plant a date pit and watch it grow.
21. Make a small oasis type home, using mud bricks. Make palms and construct a miniature oasis using animals and figures made by the children.
22. Draw a map of the Sahara and show the leading oases and caravan routes.
23. Draw pictures of tools and weapons of desert people.
24. Make desert animals and plants of *papier-mache* or clay.
25. Make water jars of clay.
26. Make musical instruments of the desert.
27. Make a frieze showing an oasis and its surroundings.
28. Have a discussion of "How Life Differs in a Sahara Oasis and in Our Own Colorado Community."
29. Exhibit things made or collected during the unit.

30. Have a "Quiz Kids" program about understandings and information pertaining to the unit.
31. Have a puppet show depicting the life of this community.
32. Show a child-made "movie" of life in and around an oasis of the Sahara.

UNIT IV. COMMUNITY LIFE IN A HOT, DAMP COUNTRY—AMAZON OR AFRICAN CONGO

(Study life in one or the other region, depending on which is given in your available texts and reference books.)

Problems for Developing the Unit

1. What factors make this a hot, damp climate?
2. How does the distance from the equator, the altitude, and general surface of this region affect the way the people live?
3. How do the important rivers affect the community life?
4. What types of homes are used most by the natives in this region?
5. What type of clothing do the people of this region need and wear?
6. What kind of food do these people require? How do they obtain it?
7. How do the fathers provide for their families? What kind of workers are they? What times of the day do they work?
8. What kinds of communities and community life are found in this region?
9. What races of people live here?
10. What health conditions prevail?
11. What animals, plants, birds, reptiles, and insects live in this jungle region?
12. What musical instruments, dances, ceremonials, and songs have these natives developed?
13. What products do the natives exchange with the white man?
14. What means of transportation and communication do we find among these small, uncivilized villages?
15. What are the dangers of travel in this region?

16. What early explorers first traversed the area?
17. Contrast the life and conditions of one of these primitive communities with those of your own.

Activities

1. Display representative pictures, maps, objects, products, or animals (monkey, etc.) of the jungle.
2. Show a film or slides about life in this type of community.
3. Tell a story about child life in the jungle.
4. Have a class discussion of other types of communities that will lead into a study of community life in this region.
5. Study maps about this region to note forests, rivers, latitude, and settlements.
6. Read texts, reference books, and fiction about life in the jungle.
7. Write letters for booklets and maps. (Pan American Union, Steamship companies, etc.)
8. Make a comparative chart showing the likenesses and differences in this region and in your own home community.
9. Make reports on the material read.
10. Dramatize stories that have been read about life in the jungle.
11. Have an imaginary conversation between a child from this region and a boy or girl from Colorado, in which they tell about their customs of living.
12. Discuss problems listed for developing the unit.
13. Write letters for information and thank-you letters.
14. Write original stories, plays, and poems about life in the jungle.
15. Write an informational article for the school paper.
16. Make a dictionary of new words learned in the unit. Illustrate where possible.
17. Make things related to the jungle community. (Houses, dolls in costumes, musical instruments.)
18. Make jungle animals of clay or *papier-mache*.
19. Make types of jewelry worn by natives of the jungle.
20. Make picture maps of the area.

21. Make a wall hanging (wrapping paper or textile) showing jungle life.
22. Have conferences with the pupils frequently about their work and study.
23. Have a discussion about how much more simple the jungle community is than our community.
24. Exhibit interesting things collected and made during the study and invite the parents to see them.
25. Make and exhibit peep shows of jungle scenes.
26. Give talks about the jungle community and use illustrative material made by the children.
27. Present a puppet play about things learned from the study of the jungle community.
28. Produce a play based on a gathering of the jungle animals for some purpose: protection, to choose a leader, etc.

UNIT V. COMMUNITY LIFE IN AN ISLAND COMMUNITY—THE HAWAIIAN ISLANDS

Problems for Developing the Unit

1. Why are the Hawaiian Islands called the "cross roads" of the Pacific?
2. How were the islands formed? What surface features are common? What kinds of plants and animals live there?
3. What races of people might be found in a typical community? (White, Hawaiian, Chinese, Japanese, etc.)
4. In what ways do these people make a living?
5. What kind of houses do they have?
6. What food do they eat?
7. What products do they send to our country? What do we send to them?
8. What natural factors make life in such an environment comparatively easy?
9. How do people travel from one community to another in the islands? How do they reach the mainland?
10. What types of communication do they have?
11. What kind of schools are found in these island communities?
12. What sports and other forms of recreation are popular in the islands?

13. What types of music, art, and dance are characteristic of the isles?
14. What effect has United States control had upon community life?
15. What differences are there between life on an island and life on the mainland?
16. Why has Hawaii been a popular vacation land? How does it differ from Colorado as a playground?
17. Compare life in a typical Hawaiian community with life in your community.

Activities

1. Arrange pictures, maps, travel folders, and materials from the Hawaiian Islands on the bulletin board.
2. Listen to Hawaiian music played on a phonograph.
3. Listen to interesting stories about Hawaii.
4. See a good film or a group of slides about the islands.
5. Locate the islands on a map of the world. Study them on a map of Hawaii.
6. Read many references, texts, and stories about the islands and their life.
7. Invite someone who has been to Hawaii to talk to the class.
8. Have class discussions that bring out important facts about these islands. (May be based on problems listed for developing the unit.)
9. Read poems aloud about the islands. (Choral speaking would be good.)
10. Sing Hawaiian songs.
11. Give reports on how people in an island community make a living.
12. Make up a play showing the way people celebrate holidays in the islands.
13. Dramatize stories of Hawaiian life.
14. Make lists of words that have been learned in studying Hawaii, and play games with them.
15. Write letters to get information about Hawaii or to ask people to come to speak to the class.
16. Write original stories, plays, poems, and songs about the islands.

17. Make charts, comparing an island community with other types of communities.
18. Make a large picture map of the islands.
19. Make pineapples and other types of tropical fruits of *papier-mache*.
20. Make leis of crepe paper.
21. Make Hawaiian musical instruments.
22. Learn a typical Hawaiian dance, such as one of the hulas.
23. Make a frieze showing communities and activities in the islands.
24. Make a diorama of scenes depicting Hawaiian life. (Beach scenes, houses, school, volcano, festival scene, etc.)
25. Use finger painting to portray Hawaiian objects and scenes.
26. Invite parents and others to come to see the things that have been made and serve pineapple flavored refreshments.
27. Give a play that shows the recreational opportunities of Hawaii. Include Hawaiian songs and dances.
28. Have a discussion of what has been learned about community life in the islands.
29. Play Hawaiian music on instruments that have been made by the children.
30. Have a puppet play about child life in Hawaii.

UNIT VI. COMMUNITY LIFE IN THE COLD LANDS

Problems for Developing the Unit

1. Why is the South Pole colder than the North Pole?
2. What types of life do we find in the two polar regions?
What races of people?
3. How does the community life in these two regions differ?
4. Why are the winters long and the summers short?
5. What different types of shelter are found in the communities of these regions? How do some of these differ in winter and summer? (White man, Indian, Eskimo.)
6. What kinds of food are eaten by people in polar regions?
What kinds of dishes and utensils do they use?
7. What kinds of clothing must be worn?
8. How do these people make a living?

9. What kinds of weapons do they use for hunting and fishing?
10. What products do they exchange with us?
11. How do people get from one community to another in these cold regions?
12. How do they communicate with each other and with the outside world?
13. What provisions are made for the education of the children?
14. What dangers are met by people who live in these communities?
15. Why has Admiral Byrd made his expeditions to Little America?
16. How important are fishing, mining, and lumbering in the cold lands? Where are these industries found?
17. Why is the Government sponsoring a project at Matanuska Valley? What is the nature of this community? Its success? (See *Reader's Guide* in library for references.)
18. What forms of artistic expression are found in the Far North? (Carving, totem poles, clothing designs, etc.)
19. Compare the difficulties of living in a cold region with those of living in a warm region, such as Hawaii.
20. Compare life in the polar regions with life in high altitude regions of Colorado; with life in your own community.

Activities

1. Display a number of pictures and maps of the Far North.
2. See a good film about the cold lands and one about Byrd's expedition.
3. Study travel folders and maps from steamship companies.
4. Read a good story about the cold lands.
5. Invite someone who has been to Alaska to talk to the group.
6. Go to a museum and study collections of objects from these regions.
7. Read a number of good references, texts, and stories.
8. Watch for clippings in the newspapers.
9. Read about noted explorers in these regions and nominate some to a "Hall of Fame for Explorers": Peary, Stefansson, Amundson, Scott, Byrd, etc.

10. Give reports on reference reading related to pupils' problems and those listed for developing the unit.
11. Pretend to have visited the North Coast of this continent and tell the class what you have seen.
12. Read original stories about Eskimo or Indian community life to the class.
13. Write letters to people who have been to Alaska to find out information.
14. Write stories, plays, poems, and songs about northern peoples.
15. Make a chart comparing life in the Far North with that in a different type of community, such as Hawaii, the Sahara, or Colorado.
16. Make scenes of the Far North using finger painting.
17. Make reindeer, dogs and sledges, and igloos of clay or *papier-mache*.
18. Make soap carvings to resemble ivory carvings of the natives.
19. Make a chart of the new words learned in this unit. Use it for word games.
20. Make evaluations every day of what has been accomplished toward the development of the unit.
21. Let children make up questions to ask each other about people and animals of the North or Far South.
22. Help children to evaluate themselves and their own progress in locating and using information, handling tools, etc.
23. Have a discussion of why life is more difficult in the Far North and South.
24. Invite guests to come to see things that have been made during the study of the unit.
25. Give oral reports of things learned about community life of the cold lands.
26. Give a puppet play to show the community life of this region. (Eskimo, Indian, or white man.)

GRADE FIVE

CENTER OF INTEREST—LIFE IN THE UNITED STATES

After some years of studying community life, the pupil begins to acquire sufficient understanding to study a larger unit, his country. Understanding America better is the main purpose of the fifth grade units.

Knowledge of our land and our people should be gained in as realistic a manner as possible. Much emphasis is placed upon ways of living, problems of the people, and the culture of the various regions studied.

We should help children learn as much as possible about the America of today and the history of its development. The various regions of the country are studied somewhat in the order of their settlement, with the geography and the history of the discovery, exploration, settlement, and early development of the nation. Such complex subjects as the Civil War are deferred until the eighth grade, when the children will be better able to understand their meaning.

UNIT I. LOOKING AT OUR COUNTRY AS A WHOLE

Overview

A child's first study of the United States should be an introduction to the country as a whole. He should gain some idea of the general shape of the country, its main surface features, and its location, with regard to this and other continents. The kind of people who live here and how they came to be here should lead into a brief study of the discovery and early exploration of the land. The exploration and settlement of the country may be developed in greater detail as the various regions are studied in the series of units for the grade.

Objectives

1. To learn something of the size and shape of the United States and its location as related to the continents and oceans of the world.
2. To gain some concept of our land in terms of physical features and natural regions.

3. To find out how and by whom this continent was discovered.

4. To gain a general idea of the vast wealth of the United States in land and people and other resources.

5. To become acquainted with the "personality" of the United States and its people.

Problems for Developing the Unit

1. Where is Colorado located in the United States?
2. What is the general size and shape of the United States?
How does its size compare with that of other countries?
3. Where is the United States located with regard to other countries and continents? With regard to oceans? With regard to equator and poles? With regard to the world's trade and travel routes? Is the country well located?
4. What kinds of land forms do we have in the United States? Where are they located and what are their names? (Chief mountain ranges, plateaus, river valleys, coastal plains, central plains, peninsulas, rivers, lakes, and gulfs.)
5. With what are the land forms covered? (Forests, fields, farms, towns, cities.)
6. What are some of the main travel routes in the country?
7. How do people travel in America? (Cars, trains, airplanes, busses, etc.)
8. How have the mountains and valleys helped or hindered the development of travel and settlement in America?
9. Where are the principal cities of the country located? Why have they grown where they are? (Harbors, travel routes, junctions of rivers, nearness to resources, etc.)
10. In what parts of the country are there few people?
11. What kinds of climate are found in the United States?
12. What led to the early discovery of various parts of this continent? (Vikings, Columbus, the Cabots, and other early explorers.) How did these voyages of discovery succeed or fail in their purposes?
13. What stores of natural resources do we have in our country? (Soil, forests, minerals, water, water power, plants, animals.)

14. What kind of people live in America? (Farmers, factory workers, store keepers, doctors, etc.) How do they happen to be here? (Native Indians, white people from European countries, Orientals, Negroes from Africa, etc.)
15. What do you like best about the United States?

Activities

Approach

1. Plan an imaginary automobile trip from your community across the country to the east coast and a second trip to the west coast. Locate good routes and discuss what might be seen on the trips. Decide what to take in the car, how to dress, and what the cost of the trip might be.
2. Arrange a bulletin board for recording the "trips." Place an outline map of the United States in the center and trace the routes as the trips progress. Collect or draw pictures to depict the different parts of the country seen. Place them around the map and tie them to the proper places on the map by means of colored string.
3. Locate pictures and reading material about the regions to be crossed and the places visited.
4. See a film showing different parts of the United States.
5. Examine picture books and travel folders to gain ideas of our country through pictures.
6. Study a map of the world to note the location of our country with regard to other continents and oceans.

Informational

1. Study different maps of the United States to trace routes of the imaginary journeys and locate places seen.
2. Find out the nature and location of natural regions to be crossed by studying relief or physical maps.
3. Study pictures and reading matter to learn as much as possible about the states, cities, and other places of interest being visited.
4. Pupils tell about different parts of the United States they have seen on real trips.
5. Ask people who have lived in or visited different parts of America to talk to the class and show them pictures or films of the regions.

6. Explore the local community to find examples of land and water forms: hills, mountains, valleys, plains, rivers, canyons, lakes. Discuss how these forms came to be. Observe the work of both wind and water erosion.
7. Read texts and stories about early explorers who reached this continent. (Vikings, Columbus, the Cabots, etc.)
8. Study the meaning or symbolism of the American flag.
9. Write letters to railroad companies, oil companies, and Chambers of Commerce asking for travel folders, maps, and information.

Expressional

1. Keep individual diaries of the cross-America "trips."
2. Write short biographies or accounts telling of the lives and expeditions of early discoverers and explorers in America. Make them into a "Who's Who" booklet.
3. Make a frieze of scenes representing a cross section of the United States. (Coastal plains, mountains, valleys, high plains, rivers, farms, cities, etc.)
4. Write postcards and letters to the children of another room telling them about the class "travels."
5. Construct scenes of American life on table or sand table. (Towns, farms, valleys, forests, lakes, etc.)
6. Sing songs about America and about Columbus.
7. Read poems aloud about our country and its people, such as "America the Beautiful," by Katherine Lee Bates, or "I Am an American," by Elias Lieberman. (Choral speaking might be used.)
8. Draw a large picture map of the United States showing mountains, streams, cities, farms, etc. (Use wrapping paper or the back of linoleum.)
9. Make a guide book for tourists about trips and traveling in the United States.

Evaluational

1. Have a class discussion of "What I Like Best About America."
2. Each child may pretend to be a person or place studied in the unit and give his impersonation orally. Let the class guess his identity.

Culminating

1. Give a travelogue "movie" (drawings by the children) for the room parents about "Our Land" or some other appropriate title. The pupils may tell about their trips across the United States as the pictures are shown.
2. Have a play in the "Living Newspaper" style, in which scenes from different parts of the country are given (mostly in pantomime). These might be a farm scene, a store scene, a person buying a home town paper at a city corner, etc. Scenes should be short with a few sound effects and props to indicate the location of the action, such as a street sign for the city corner, a mountain peak or two sketched rapidly on the board or wrapping paper for mountains, etc. Children should rotate as narrators for the play.

(Suggested time for unit—3 weeks.)

UNIT II. THE NORTHEASTERN STATES

(Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania.)

Problems for Developing the Unit

1. Why are the Northeastern states so densely populated?
2. What surface features, such as mountains, rivers, islands, and capes, are found in these states? What are their characteristics?
3. How do people in these states make a living?
4. How did the early New England colonies come to be English?
5. How did the people live in Colonial days? (Houses, food, clothing, schools, churches, customs.)
6. Who were some of the early Colonial leaders and what were their achievements?
7. How did the Dutch happen to settle in New York? How did they live and what became of their colony?
8. What European peoples settled in Pennsylvania and New Jersey?

9. What reminders of these early English and Dutch colonial days may still be found in New York and New England? (Old houses, furniture, churches, crooked streets, town meetings, names of places, Plymouth Rock, Pilgrim's Monument, burying places with historic graves.)
10. What racial groups are found in the Northeastern states today? Why did they come to this country?
11. Why are so many large cities located in the Northeast? What is the importance of each? How are the people supplied with life necessities?
12. What important industries are found in this region? How have transportation and communication facilities affected their growth?
13. What cargoes are carried by the coastwise steamers that sail up and down the Atlantic coast?
14. What types of foreign trade and transportation are carried on by New York and other Eastern ports?
15. In what ways are the Northeastern states a center of American culture? (Metropolitan Opera, plays, book and magazine publishing, radio programs, large universities, fine orchestras, museums and art galleries.)
16. Why is much of the nation's business centered in these states?

Activities

1. Arrange bulletin boards with pictures and maps of New England.
2. See a film about the Northeastern states.
3. Have a planning period in which pupils and teacher discuss what they want to find out about this part of the United States.
4. Find out what manufactured articles at home and at school were made in Northeastern cities.
5. Listen to a musical recording or radio program about this region.
6. Find out as much as possible about the Northeastern states through the study of maps.
7. Locate the thirteen original colonies on the map.

8. Appoint committees to work with the teacher in collecting materials for use in working out the plans developed in the planning period.
9. Read about how the people live in large Eastern cities.
10. Visit a hardware store to find out which articles have come from the Northeastern states.
11. Invite someone who has traveled in the New England states to talk to the class.
12. Read and discuss stories about early life along the Atlantic seaboard.
13. Make a collection of pictures or objects of early New England life: utensils, furniture, costumes, vehicles, etc.
14. Examine title pages of books and magazines to see in which cities they were published.
15. Study several pictures by Eastern painters. (Reproductions may be found in many magazines.)
16. Write an article for a school or class newspaper about "Life in the New England States."
17. Make a collection of advertisements of manufactured articles and pleasure resorts of the Northeastern states.
18. Make a collection of postcard pictures of the Northeastern states.
19. Dramatize the story of the Pilgrims, the first Thanksgiving, or Penn's Treaty with the Indians.
20. Dramatize a New England school or quilting bee scene.
21. Make a wall hanging depicting the landing of the Pilgrims.
22. Plan a make-believe tour of Manhattan in New York City. Make a list of the important cultural centers you visited.
23. Construct a model apartment home such as one might find in New York.
24. Make a frieze showing the development of the textile industry.
25. Write a poem about New England, the Pilgrims, or some other interest growing out of the unit.
26. Engage in some of the activities characteristic of Colonial life: making quilts, rag rugs, sun dials, candles, etc.
27. Play games enjoyed by Colonial children.

28. Have a round-table discussion at which pupils analyze their results in terms of the goals which they set up in the planning period.
29. Plan an early American tea party for the mothers.
30. Give a short play about colonial life in New England. The characters may be people engaged in each of the important occupations, such as fishing, fur trading, farming, etc.
31. Give a pageant of the thirteen colonies in which a child represents each colony and tells how it was founded.
(Suggested time for unit—6 weeks)

UNIT III. THE SOUTH ATLANTIC STATES

(Maryland, Delaware, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.)

Problems for Developing the Unit

1. Why have the people of the South Atlantic states always made a large part of their living by farming?
2. What are the chief agricultural products of the region? Where are they consumed?
3. What is the importance of the textile industry in these states?
4. What other manufacturing is done in this section?
5. What are Florida's principal sources of wealth?
6. What nations sent early explorers to this region? (Spanish, English.) Who were the leaders in expeditions and settlement? (Ponce de Leon, Menendez, Drake, Oglethorpe, Raleigh.) What were their aims and what experiences did they have?
7. What cities developed in these states? What is their nature and importance?
8. What is the character of the nation's capital? What government functions are carried on there?
9. What contributions have the people of this region made to our American culture? (Folk music, dances, literature, art, crafts.)
10. Cotton and tobacco, important products of these states, are raised on plantations. What are plantations and why did they develop?

11. What large estates of prominent early Americans may still be seen in Virginia and other states of this region?
12. What social problems have developed in these states? (Share croppers, isolated mountain communities, mining centers, etc.)
13. Why is Florida an especially popular resort state?

Activities

1. See a film about Florida or Southern plantations.
2. Examine articles of cotton clothing worn by the children.
3. Study maps of the region to note: Atlantic Coastal Plain, Piedmont Plateau, Fall Line, Appalachian Mountains, rivers, cities, and states.
4. Develop an exhibit of cotton in its various stages of growth from the seed to the finished clothing product.
5. Read stories and texts about the history and life of the South Atlantic states.
6. Collect and study pictures of exteriors and interiors of old Virginia, Maryland, Carolina, and Georgia homes. Include pictures of furniture.
7. Collect pictures and stories about important men and women of the region.
8. Plant some cotton seeds and make sketches of their different stages of growth.
9. Find out what products are made from cotton seeds.
10. Make lists of all sorts of articles made from cotton.
11. Contrast the climate and attractions of two resort states—Florida and our own state, Colorado.
12. Take an imaginary voyage along the coast of these states, going ashore at all important coastal cities. Read about these cities, collect pictures about them, and trace the trip on a map.
13. Make an imaginary trip to Washington, D. C. Read about the city in newspapers, magazines and books. Write letters for information. Keep individual diaries of the trip and make a "film strip" about interesting people and scenes.
14. Make a picture map of Florida.

15. Draw an outline map of this region and paste in samples of its products.
16. Learn to sing some of the Negro spirituals and other folk music of the region.
17. Learn a folk dance of the hill people of these states.
18. Make a puppet play about plantation life.
19. Have a program for the parents of "film strips," Southern songs, dances, and exhibits of work done by the class.
(Suggested time for the unit—3 weeks.)

UNIT IV. THE NORTH CENTRAL STATES

(Michigan, Ohio, Indiana, Kentucky, Wisconsin, Illinois, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.)

Problems for Developing the Unit

1. What natural factors make the North Central states such a great food-producing region? (Soil, climate, surface features.)
2. What kinds of farming are done in the various sections of this region? What are the main products?
3. Why is stock raising an extremely important industry of this region?
4. Why are large manufacturing and trade centers needed in this area? (Process the food supplies, provide supplies, exchange goods, etc.) What kind of manufacturing is done? What are the products?
5. Why is soil conservation so important to the people living in these states?
6. What foods and other products do we secure from Mid-Western states?
7. What necessary mineral resources are found in the region?
8. How was this region explored and settled? (Spanish, French, English; Daniel Boone, James Robertson, George Rogers Clark, etc.)
9. What Indian tribes lived in these states? How did they live?
10. What problems did the caravans of Westward-bound settlers of early days encounter in passing through these states?

11. What freedoms and what opportunities did these people have? How do these compare with our freedoms and opportunities today?
12. In what direction do the railroads of the North Central States tend to run? Do you think their location was influenced by early explorers?
13. What were the principal gateways to the West used by the early settlers?
14. In what ways have these states made progress since early days? (Transportation, agriculture, industry, schools, culture.)
15. What are the great cities of this region? What are their distinguishing features? Why did they develop where they are? What is their importance today?
16. What different races of people make up the present population of these states?

Activities

1. Display pictures, books, and objects dealing with pioneer life in the Mid-West.
2. Encourage the children to tell about visits they have made to Mid-Western farms and cities.
3. Make a trip to the grocery store to observe and list all of the foods and products which came from the North Central states.
4. Study several maps (relief, physical, political, special) to learn about the states, cities, surface, rivers, lakes, products, and climate of the region.
5. Read texts, reference books, and stories about life and conditions in the North Central states.
6. Read accounts of early-day caravans of Westward-bound settlers.
7. Read appropriate poems, such as "The Corn Song," by John Greenleaf Whittier, or "In the Fields," by Elizabeth Barrett Browning.
8. Make exhibits showing all the stages of growing of corn and wheat from the seed to the manufactured product.
9. See a film about the region, such as "The Plow That Broke the Plains," or "The River." Excellent films may be obtained about wheat, corn, dairying, etc.

10. Make a collection of advertisements showing all kinds of cars manufactured in the region.
11. Have a discussion of problems of these states and how they might be solved, such as soil erosion, floods, traffic hazards, slums in cities, and poorly equipped one-room schools in the country.
12. Plan a miniature Kansas wheat farm on a sand table. The sand may be removed and replaced with good soil. The fields should be laid off, a farm yard constructed, and the wheat and other crops planted. Take pictures of your farm to put in a class book.
13. Plan to plant a tree at home or at school.
14. Write to school children in these states to find out about their life and surroundings.
15. Make a class book about the North Central states. Tell about their industries, occupations, products, and cities. Illustrate your account with pictures.
16. Make a frieze showing the development of transportation from the time of the pioneers to the present.
17. Sing songs about the various rivers and states of the region.
18. Draw a picture map of the region.
19. Make finger paintings, using designs suggested by the fruits, vegetables, and flowers of this region.
20. Write questions about interesting, important facts found in this unit. The teacher may prepare a short-answer test from these questions.
21. Have a parade of floats, by making one float to represent each state in the North Central area. Decorate each one with samples of the products produced in the respective state. Shoe boxes, wagons, etc., may be used to make the floats.

(Suggested time for the unit—6 weeks)

UNIT V. THE SOUTH CENTRAL STATES

(Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas.)

Problems for Developing the Unit

1. Why is agriculture the basic industry of the South Central states? (Climate, soil.)

2. What other industries have been developed in these states?
3. In what ways has agriculture become more diversified?
4. Why is cotton still the main crop of the region?
5. How have inventions changed industry in the South?
6. What articles do we in Colorado secure from these states?
7. What fuels do we acquire from Texas and Oklahoma?
8. What types of cities are found in the South Central states?
(Manufacturing, trade centers, seaports, etc.)
9. What are some of the problems of the people in the South?
(Housing, share cropping, cheap labor, inadequate schools, race problems, etc.)
10. What cultural contributions have been made by the Southern people? (Songs, dances, literature, art.)
11. Does plantation life still exist in the South? What was the nature of plantation life in the Deep South in the early days?
12. What peoples explored and settled in these states? How did we acquire Louisiana? Texas?

Activities

1. Arrange a bulletin board exhibit about cotton, using a map, cotton bolls, pictures, samples of cotton products, and labels or cartons from cotton seed products.
2. See a film showing life in the Deep South, the cotton industry, or New Orleans.
3. Write to manufacturers for samples of cotton fabrics.
4. Visit a grocery store or market in winter to learn which summer vegetables and fruits were shipped here from the South Central states.
5. Visit a lumber yard to find out which kinds of lumber came from the South.
6. Study maps to gain information about the surface features, states, cities, climate, and products of the South.
7. Read textbooks and other references to find information about the problems listed for developing the unit.
8. Read stories about child life in the South, both past and present.
9. Ask the children to tell about any trips they have made in Southern states.

10. Write letters to school children in the South for information about their cities and states.
 11. Try to discover why New Orleans is so far from the coast.
 12. Make a model of the Mississippi delta in a sand table.
 13. Construct a model of an oil well.
 14. Make a class book about Colorado and exchange it with a school in the South for a pupil-made booklet on the South or the cotton industry. This will require considerable letter writing to make the arrangements.
 15. Make a frieze of scenes showing life in the South.
 16. Make illustrated charts of uses of cotton.
 17. Sing songs and listen to recordings of Southern music.
 18. Collect pictures about the South or by Southern artists. (Reproductions may be collected from magazines.)
 19. Make a picture map of Texas.
 20. Make stick or hand puppets to represent figures of the Old South and give a play about plantation life or steamboat days on the Mississippi.
- (Suggested time for the unit—6 weeks)

UNIT VI. THE MOUNTAIN STATES

(Montana, Wyoming, Colorado, New Mexico, Idaho, Utah, Arizona, Nevada.)

Problems for Developing the Unit

1. Why are the mountain states sparsely populated?
2. Why is agriculture a basic industry in this region? What are the principal crops?
3. Why do we find such variations in climate in this region? Why is there so little rainfall in most parts of these states?
4. How has man been able to raise crops in many naturally dry sections in these states?
5. In what other ways do the people of the mountain states earn their living?
6. What four important rivers have their beginnings in Colorado? Where do each of these rivers finally go?
7. What important mineral deposits have brought wealth to these states?

8. How have transportation barriers been overcome in the mountain sections?
9. What Indians inhabit these states today? Are they numerous or few? How do they live?
10. What early exploration and settlement was done in these states by the Spanish?
11. What brought explorers and settlers to this region from the East? What hardships did they meet? How did they live? What kinds of houses, food, and clothing did they have? Who were some of the noted pioneers? What were their accomplishments?
12. How did the pioneers travel and transport goods?
13. What are the outstanding scenic features of the region?
14. What is the character and importance of the stock raising industry?
15. What cities developed in these states? What are their industries and characteristics?
16. What are the principal transportation routes today?

Activities

1. Collect pictures of the West and arrange them on a bulletin board.
2. Plan a trip to the mountains.
3. Tell about places in the West the children have visited.
4. Visit historic places in the community.
5. Study maps of the region to learn the names and location of the states, cities, and surface features.
6. Collect and study pictures about the National Parks.
7. Collect pictures of great dams which have been built in the mountain states.
8. See a film about ranch life in the West.
9. Visit a museum, old hotel, or old home to see historic relics.
10. Ask a forest ranger or county agent to tell the class about his work.
11. Make a collection of pictures of schools of these states.
12. Read stories about the cowboys, Indians, and adventurers of the early days.
13. Read textbooks, other references, and stories about the mountain states.

14. Read stories about the settlement of the mountain states.
15. Write for information about our National Parks.
16. Have a "True Story" period in which members of the class tell true stories about the West.
17. Listen to a record of Indian music. Sing Indian songs.
18. Read and sing miners' songs and cowboy ballads.
19. Construct a pioneer home.
20. Make illustrated guide books for each of the National Parks in the region.
21. Draw pictures showing wild animals of the Rockies.
22. Learn pioneer dances—square and round.
23. Make a frieze that tells the story of communication in the West from early pioneer days down to the present. Do the same for transportation.
24. Choose a part of the mountain states that you think is the most beautiful or the most wonderful and write a description of it. Illustrate these and make them into a class book.
25. Model the relief of these states in a sand table, showing the Rocky Mountains, Continental Divide, the river systems, and the lakes.
26. Make a frieze showing scenery of the West.
27. Experiment with Indian art forms: weaving, pottery making, katchina dolls, seed jewelry, etc.
28. Prepare the script for a radio program about the days of Buffalo Bill. Plan to invite your friends. Serve simple refreshments with food produced in our state.
29. Make a handmade "movie" about the mountain states or the pioneers and show it to the parents.
30. Have an exhibit of pictures and objects showing the art of the Southwest Indians.
31. Give a dramatization of Coronado's expedition in this region.
32. Give an evening entertainment of Western songs, dancing, and plays. Invite the parents to participate in the square dancing. Refreshments may be served as box lunches or from a chuck wagon.

(Suggested time for the unit—6 weeks)

UNIT VII. THE PACIFIC STATES

(Washington, Oregon, California.)

Problems for Developing the Unit

1. What things do we get from the Pacific states? (Fruits, vegetables, moving pictures, clothing, lumber, etc.)
2. What are the chief industries of the Pacific region? How are they affected by the climates of the different sections?
3. Why are there so many Spanish names in the Southwest?
4. Why did many people flock to the West coast during the nineteenth century?
5. What route did the early settlers follow when going to the Oregon territory? What were some of the dangers encountered?
6. What is the importance of the Great Valley of California?
7. How have improved communication and transportation methods aided the growth of this area?
8. Why have many large dams been built across important rivers in this region?
9. Why have Los Angeles, San Francisco, Portland, and Seattle become such important cities?
10. What contributions has this region made to the culture of our country?
11. Why is the center of the moving picture industry located in the southern part of California?
12. Why do many people from all over our country visit the Pacific coast each year?

Activities

1. Arrange a bulletin board exhibit of post cards and other pictures of the Pacific states.
2. See a film about California.
3. Study maps to learn about the location, surface features, climate, cities, states, and products of this region.
4. Write to school children in several important cities of the Western coast. Ask them for information about their cities.

5. Read geography and history books and other references to find out information about the problems listed for studying the unit.
6. Read stories about the Gold Rush.
7. Make a collection of advertisements, labels, and cartons of products from these states.
8. See a movie made in Hollywood.
9. Make a collection of pictures of the big trees of California.
10. Make replicas of early desert schooners or other early means of travel.
11. Make a model of one of the great dams found in the far West.
12. Suppose that you were a member of the group that first discovered gold in California. Write the most interesting account you can of this event.
13. Many of the old-time songs of our country developed around some incident which happened on the long trek out West in search for gold. Perhaps the class would enjoy singing some of these songs.
14. Build a model of one of the early missions found in Southern California.
15. Draw a picture map of the Pacific states.
16. Make a scrap book of scenes from favorite moving pictures.
17. Make a "movie" showing industries of the Pacific states, including the salmon industry, lumbering, farming, manufacturing, and the making of moving pictures.
18. Sing songs about the Pacific states: California, the Sierras, etc.
19. Have a party, letting the pupils impersonate their favorite movie stars by wearing some simple bit of costuming they make themselves. Shirley Temple, Mickey Rooney, Mickey Mouse, Donald Duck, and Dumbo might be some of the selections.
20. Make some cookies and jello for the party, using California fruits and nuts.
21. Show a news film (wrapping paper reel) illustrating the moving picture industry and some of its leading people.
22. Give a puppet play, using characters from Hollywood.

(Suggested time for the unit—6 weeks)

GRADE SIX

CENTER OF INTEREST—OUR AMERICAN NEIGHBORS

Much progress has been made in the last few years in the field of inter-American relations. There is a widespread desire to know and understand our neighbors to the north and south, and the "Good Neighbor" policy is a definite program of our government. The study of Latin America is being encouraged in many ways by the United States Office of Education in Washington, D. C., in order to further understanding and good will between the American peoples. We recognize the fact that the future welfare of the countries of this hemisphere depends largely on the degree to which they can work together in promoting common interests.

UNIT I. CANADA, OUR FRIENDLY NEIGHBOR TO THE NORTH

Overview

One of our closest American neighbors is Canada, politically a member of the British Commonwealth, but geographically belonging to the Americas. The friendly, casual interest which the United States has always shown toward Canada is being replaced by a desire for a deeper knowledge of that country and its people. The people of the United States and Canada can appreciate one another and work intelligently together only insofar as they understand each other.

Objectives

1. To understand how the people of Canada adapt themselves to their environment in meeting needs for food, clothing, shelter, and recreation.
2. To understand the friendly relationship which exists between the people of Canada and the United States.
3. To realize how economic interdependence is an important factor in our relationships with Canada.
4. To grow in the ability to gain information and experience through interviewing people, using references, and participating in creative activities.

Problems for Developing the Unit

1. How does the Dominion of Canada compare with the United States in size, population, and physical features?
2. How does it happen that both the English and French languages are spoken in Canada today?
3. How do the Maritime, Prairie, and Western Provinces compare with similar regions in our own country?
4. How do the short summers limit the products which can be raised?
5. Why does the largest part of the population live in eastern Canada?
6. How have modern means of transportation helped the trapper and miner in the Far North?
7. Why hasn't Canada developed a large industrial center?
8. In what ways is the government of Canada similar to the government of the United States?
9. Why are Canadians and Americans more alike than people of almost any other two separate peoples in the world?
10. Why are the summer and winter sports and pastimes of Canada and Colorado similar?
11. What transportation and communication facilities are available between Canada and the United States?
12. What exchanges are there between the two countries, both cultural and commercial?

Activities

Approach

1. Have an exhibit of pictures and objects of Canada and its life.
2. Discuss why the history of the Canadian Mounted Police is filled with adventure and romance.
3. Discuss pictures of the Dionne quintuplets and Dr. Dafoe.
4. Study the map of Canada to learn its: location, area, physical features, climate, transportation routes, provinces, cities.
5. Read stories about life in Canada.

Informational

1. Read to find answers to questions the children have raised about food, clothing, shelter, work, transportation, communication, recreation, schools, the arts, fur farming and trapping, the Royal Mounted, the cities, mining, French Canada, etc.
2. Read to find out why the United States has been able to develop her mineral resources to a greater extent than Canada.
3. Discuss in what ways the United States will benefit by the St. Lawrence River project.
4. Explain the similarities in provinces and states.
5. List the products an Indian or Eskimo in the cold north might exchange for the articles a trader has for sale.
6. Discuss reasons for differences in life in Canada and Colorado.
7. Write letters to school children in Canada to find out more about Canadian life and people.
8. Enjoy a poem or story about the work of a lumberjack.
9. Write to a Canadian travel bureau, requesting information or pictures.

Expressional

1. Write a conversation that might take place between a Colorado child, traveling in Canada, and a native Canadian child. Tell the Canadian child why things in our country are similar or different from those in his land.
2. Construct a moving picture (wrapping paper reels) to illustrate the importance of several Canadian industries: fishing, farming, lumbering, fur farming, hunting, trapping, canning, mining, weaving, etc.
3. Draw pictures or model clay figures to show various kinds of Canadian sports.
4. Learn Canadian folk songs, such as "Alouette."
5. Dramatize the discovery of gold in the Klondike region, showing its effect upon exploration and settlement.
6. Use outline maps or sand table to show that much in Canada has its counterpart in the United States.

Evaluational

1. Have a round table discussion of "Why Canada Is One of Our Best Neighbors."

Culminating

1. Give a program or play on life in Canada for another class.
2. Give short talks, telling of the opportunities for travel and vacationing in Canada. Invite parents to hear these. Exhibit: (a) pictures of Canadian scenes and activities, (b) things made by the children.
(Suggested time for the unit—6 weeks)

UNIT II. MEXICO, THE LAND OF CONTRASTS**Problems for Developing the Unit**

1. What are the main surface features, regions, and climates of Mexico?
2. What kinds of plants and animals are found in the various regions?
3. Why do most of the population live in the plateau region?
4. What are the principal industries and products of Mexico?
5. Why has Mexico rich possibilities for future development?
6. How did the culture of Spain find its way to Mexico?
7. What is the early history of Mexico?
8. What can you learn of the life of the Mexican people: work, recreation, religion, education, social conditions, food, clothing, shelter, art, music, dance, literature, transportation?
9. Why do so many Americans like to travel in Mexico? (Floating gardens, Popocatepetl, pyramids, markets, arts and crafts.)

Activities

1. Invite Mexican children, parents, or visitors to tell about customs in their country.
2. Bring a serape and sombrero to class and let the children try them on.
3. Collect and exhibit pictures, postal cards, newspaper clippings, and folders on life in Mexico. (Homes, villages, burros, making tortillas, cities, churches, markets, children, etc.)

4. Encourage Mexican children in Colorado to take pride in their heritage and to appreciate the friendliness and courtesy of their own race.
5. Read to find out how the early Aztecs influenced Mexican ways of living.
6. Discuss names in Colorado which have been borrowed from the Spanish language: Colorado, Buena Vista, San Juan, Sangre de Cristo, Mesa Verde, Rio Grande.
7. Make a list of ordinary Spanish phrases needed for travel in Mexico.
8. Make a simple Spanish dictionary.
9. See a good film on Mexican life.
10. Participate in map experiences: tracing routes, finding cities, locating rivers, pointing out mountains, etc.
11. Compare life on a Mexican hacienda with life on a cattle ranch in Colorado.
12. Listen to the radio for news of Mexico and to hear Mexican music.
13. Read texts, readers, charts, stories, poems, and letters about Mexico and its people.
14. Study some works of Mexican artists, as Diego Rivera.
15. Experiment with Mexican recipes, making tortillas, frijoles, tamales, enchiladas, chocolate, candy.
16. Make a small adobe house. Decorate with small gourd string, peppers, colored corn, etc.
17. Listen to recordings of Mexican music. Sing simple Mexican songs.
18. Make typical musical instruments: marimba, guire, mandolin, castanets, drums, pebbles in a gourd, etc.
19. Experiment with Mexican handicrafts, such as pottery making, weaving, basket making, tin work, feather work, toy making (pig bank, straw toys, corn husk dolls), charm strings of real gourds and peppers or *papier-mache*, Mexican masks.
20. Make a picture map of Mexico.
21. Make booklets of Mexican recipes: tortillas, tamales, chili sauce, etc.
22. Learn a simple Mexican dance.

23. Make a frieze showing Mexican life—for classroom or hall decoration.
24. Write letters to school children in Mexico. (American Junior Red Cross, Washington, D. C.)
25. Celebrate a Mexican fiesta by typical games, songs, dancing, and feasting.
26. Dramatize a Mexican market day, showing typical activities at the market place.
27. Give an original puppet play on interesting phases of Mexican life.

(Suggested time for the unit—6 weeks)

UNIT III. CENTRAL AMERICA AND ISLANDS OF THE WEST INDIES

Problems for Developing the Unit

1. Why do the countries of North America and temperate Europe carry on such a large trade with these regions?
2. What is the importance of the location of the Caribbean islands and Central America?
3. Why is Central America not a popular place in which to live?
4. What have been the far-reaching effects of the building of the Panama Canal? What is its importance in world affairs today?
5. Why are industries other than farming carried on with such difficulty in these regions?
6. In what ways have the people of these regions made use of favorable geographical conditions and improved unfavorable ones?
7. What is the life and culture of the people in these regions? What is the character of their work, food, clothing, shelter, customs, art, music, dance, schools, and literature?
8. What are the greatest needs of the people in these lands?

Activities

1. Locate the countries of this region on a map. Put their names on outline maps. Include important cities, mountains, canals, bodies of water.

2. Read to find out answers to questions the children raise about life in Central America and the Caribbean islands. Also look at pictures and maps and interview people.
3. Read to find out how modern methods of shipping, marketing and preserving enable us to secure unseasonable vegetables and tropical fruits from the Caribbean islands and Central America.
4. Compare the region formerly occupied by the Carib Indians with the small region they inhabit today; learn why the Caribs are nearly extinct.
5. Prepare reports on the building of the Panama Canal.
6. Construct a model of the canal, showing how the locks operate.
7. Make a class book about Central America. After considerable reading, write an account of each of the Central American countries, describing the land, people, work, schools, recreation, art, etc. Illustrate the accounts and put in the booklet.
8. Make replicas of ancient Maya buildings and objects from clay or soap.
9. Make a collection of postage stamps of each of these countries.
10. Dramatize the discovery of the Americas by Columbus.
11. Have an exhibit of products and art work from Central America, also children's original work done during the unit.
12. Give an "illustrated lecture" on the West Indies and Central America using pictures or slides made by the children. Several children should participate in the lecture.
(Suggested time for unit—3 weeks)

UNIT IV. PREVIEW OF SOUTH AMERICA

Problems for Developing the Unit

1. Where is South America located with regard to other continents and the Equator? What is its general shape?
2. Where are the mountains, rivers, and plains regions located? Do they provide good transportation routes or barriers?
3. What are the countries and principal cities of the continent? About which have you read or heard on the radio?

4. What kinds of climate are found in the different sections of the continent? What kinds of plants and animals thrive in each climate area? Which areas are best for man?
5. Why haven't the countries of South America united under one flag?
6. What languages are spoken in the various countries? From what European countries have the people of these nations come?
7. How does the period of exploration and colonial history of South America compare with that of North America?
8. Why have people of other continents been interested in South America? Why has this interest increased in modern times?
9. Why are Bolivar, Zapata and O'Higgins as famous to South Americans as are Washington and Lincoln to us?
10. What are the principal things exchanged between South America and the United States? (Include commercial products, art, music, dance, literature, friendship, protection.)
11. How do countries in South America compete with the United States in finding markets for their goods?
12. How can the shortage of manufacturing industries in South America be explained?
13. How has the building of the Panama Canal encouraged trade between the continent's East and West coasts, and also between South America and other continents?
14. What has the United States Export-Import Bank done to increase our South American trade?
15. How are airplanes and the radio helping to break down natural barriers to a more unified South America?
16. What is the significance of the Pan American Union? What is its work?

Activities

1. Point to South America (southeast). Locate it on a map of the world. What is its distance from Denver? From New York? From New Orleans? From European ports? Note its shape and physical features on maps of South America. Learn everything possible about the

continent from map study: climate, physical features, political divisions, population centers, cities, transportation routes, etc.

2. Take an imaginary voyage around the coast of South America, stopping along the way to visit important cities and other sights of interest. Keep a ship's log describing the trip, weather encountered, things seen from deck and on trips ashore. Illustrate the log with original sketches. Make a large map on wrapping paper on which the ship's route is indicated as the voyage progresses.
3. Make a bulletin board exhibit of pictures and objects collected about places visited on the above trip. Be sure to include examples of South American arts and products.
4. Listen to and sing songs which might have been heard in the various countries visited.
5. Read reference books and texts to gain information about questions raised by the children and problems listed for developing the unit.
6. Bring newspaper and magazine clippings about Latin America to class for discussion and study.
7. Trace on a map the proposed route for a railroad or highway between North and South America.
8. List the animals found in South America according to their jungle, plains, mountain, or desert home. Make a wall hanging to illustrate. Use heavy paper or textile.
9. Make peep shows of jungle scenes.
10. Discuss which regions in South America would need good harbors from which to ship products.
11. Exchange letters with children living in South America. (Through the American Junior Red Cross, Washington, D. C., or International Friendship Club, Boston.)
12. Listen to radio programs telling what South America means to us as a neighbor.
13. Prepare a map showing the air routes connecting South American countries and connecting South America with other continents.
14. Dramatize a meeting of the Pan American Union, with a child representing each country.

15. Make and present a "movie" of the imaginary trip taken around the continent. Invite parents to attend.
(Suggested time for unit—3 weeks)

UNIT V. ABC COUNTRIES

Problems for Developing the Unit

1. Why are Argentina, Brazil, and Chile called the ABC countries?
2. How were these countries explored and settled?
3. How did Argentina gain its independence?
4. How do the ABC countries compare in size, climate, population, and possibilities for development?
5. Why is Argentina called the "United States of Latin America"? Develop a list of likenesses and differences between Argentina and the United States.
6. Why has Argentina developed more railroads than any other country in South America?
7. What are the chief regions of Argentina and their products and industries?
8. How is it possible for Brazil to become one of the greatest countries in the world? (Size, location, climate, products, resources.)
9. Why is the official language of Brazil different from that of other South American countries?
10. What is the food, clothing, shelter, and work of people who live in the Amazon basin?
11. What products does Brazil ship to the United States? (Brazil nuts, cacao beans, coffee, rubber.)
12. Why is Chile called the "California of South America"?
13. What are Chile's most important industries and products and what is her commercial importance?
14. How has capital from the United States promoted the development of resources and industries of these countries?
15. How would you compare life on the estancia with life on a farm in Colorado?
16. What is the nature of the education, religion, and recreation of the people in these three countries? What can you learn of their art, literature, music, dance?

17. How can the people of the Western hemisphere become better neighbors?
18. How has the United States promoted friendly relations with these countries?

Activities

1. Show pictures and films of different places and industries of the ABC countries.
2. Learn as much as possible about these countries through map study: location, area, physical features, population, climate, products, cities.
3. Write to the Pan American Union in Washington, D. C., for a list of their publications on cities, products, and heroes of the ABC countries. If possible, order some of these materials.
4. Read to find out about life in the jungle, plains, plateau, and mountain regions of these countries. Locate these regions on the map.
5. Gather pictures to show the various stages of coffee growing. With the use of these pictures, tell the story of coffee growing.
6. Compare farm scenes (as shown by pictures) in the ABC countries with those of the United States.
7. Read to find out about life on a rubber plantation.
8. Describe the city of Buenos Aires, telling about ways in which it is similar or different from typical American cities.
9. Write a description of a trip up the Amazon by boat, from its mouth to its headwaters, describing the climate, vegetation, native life, animals, dangers, etc. Use information gained from picture study and reading.
10. Write a description of the statue, "Christ of the Andes" and tell its significance to Argentina and Chile.
11. Give oral reports telling why the ABC countries have contributed most to the development of South America.
12. Read stories, poems, and legends about these countries.
13. Show by graphs that the railway mileage in the United States far exceeds that of the ABC countries.

14. Make graphs showing the production of coffee, rubber, cotton, sugar, cattle, and wool.
15. Make graphs showing the value of nitrate, copper, and tin produced in various countries.
16. Construct a scene of a typical home of the Amazon lowlands.
17. Make and use musical instruments of the jungle.
18. Read riddles to the class which you have written, telling about some of the places or things studied in the unit.
19. Make a product map of each country.
20. Prepare and present a "Quiz Kid" radio program, using the information you have obtained from your study of the cities, rivers, mountains, peoples, and products of these countries.
21. Present a puppet play telling some story the class has read about South American children.

(Suggested time for unit—6 weeks)

UNIT VI. THE CENTRAL AND NORTHERN COUNTRIES OF SOUTH AMERICA

Problems for Developing the Unit

1. What foods, clothing, minerals, and other products do we obtain from the central and northern countries of South America?
2. What kinds of surface features and climate are found in these countries?
3. Which rivers of central and northern South America are navigable? To what extent?
4. What strange or unusual animals are found in the jungles of South America? In the Andes?
5. What country has a coast facing two oceans?
6. What seaports serve as centers of trade for these countries? Can you locate them?
7. Compare the climate, products, and peoples of these countries with those of the southern part of the United States.
8. Why is Bolivia sometimes called "The Land in the Sky"?
9. Why is Uruguay such a progressive country?
10. What can you discover about the people and products of Paraguay?

11. What can you find out about each of these: quebracho, tannin, yerba mate, estancia?
12. How are the Guianas different from other South American countries?
13. What products of commercial importance are obtained from Venezuela?
14. Along what coast of South America are the world-famous pearl fisheries?
15. What are the climate and chief products of Colombia, Ecuador and Peru?
16. Describe the three regions found in Ecuador.
17. How do South Americans travel in the mountains and in the jungle regions?
18. What precious jewels and metals are obtained from these South American countries?
19. How did Simon Bolivar come to be known as "The First Pan American"?
20. In what ways was the Inca empire progressive?
21. What did Francisco Pizarro's invasion of Peru mean to the New World?
22. Which Indian tribe of fifteenth and sixteenth century Central and South America had reached the highest degree of civilization?
23. What European peoples had a large part in the settlement and developing of these countries?
24. What art, music, dance, and literature have been developed in these countries?
25. For what crops or products is each of the South American countries in this group world famous? Who buy most of their products?
26. In what ways are people in these countries and in North America trying to become better acquainted and mutually helpful?

Activities

1. See some films about these countries of South America.
2. Arrange a bulletin board with pictures, charts, and clippings.
3. Study several different maps to learn the names of these countries and as much about them as possible.



The upper grades in a two teacher school learn about their American neighbors

4. Make a large outline map of South America and write in the names of the countries studied in this unit. Add their capitals, leading cities, rivers, and mountains.
5. Make a list of things the pupils would like to find out about these countries.
6. Read texts, reference books, and magazines to find information about the problems listed for developing this unit and the questions raised by the pupils.
7. Read stories and poems about the life, history, and culture of these countries.
8. Collect and study art and craft work from these countries. Reproductions may be used.
9. Listen to recordings and radio programs of music from these countries.
10. Listen to radio programs from or about these countries.
11. Write letters to school children for information about their life and their country.
12. Write a description of the country of South America you would choose as a home if you were to live on that continent.
13. Make drawings of the South American animals and their habitat.
14. Model South American animals from clay or make them of *papier-mache*.
15. Construct a hut such as might be seen along the Orinoco. Place it on stilts over paper or a mirror that represents water. Make a dugout canoe, animals, people, and trees for your scene.
16. Make a table model of an Inca village.
17. Make an outline map for the bulletin board. Then place a table under the map and string samples or pictures of products from these countries.
18. Make an outline map on cloth for a wall hanging. Then outline the country, as it is studied, with yarn. The outstanding characteristics or product might be shown in harmonizing colors.
19. Make a frieze showing modes of travel in South America, both ancient and modern.

20. Play a baseball game with questions on these South American countries.
21. Write sentences about the countries of South America, leaving a blank in place of one important word in each sentence. Exchange papers and see how many blanks each pupil can fill in correctly.
22. Give a puppet play about child life in one or more of these countries.
23. Make and show a hand-made "movie" travelogue, telling about places visited (vicariously) in these lands.
24. Have a South American music and dance festival.
(Suggested time for unit—6 weeks)

UNIT VII. ALASKA

Problems for Developing the Unit

1. How must the people of Alaska adapt themselves to their environment in meeting their needs for food, water, clothing, and shelter?
2. Why does Alaska attract tourists?
3. What is meant by the "Inside Passage"?
4. What is the early history of Alaska?
5. What progress has been made by the inhabitants of Alaska from the time it was explored by Captain Bering to the present time?
6. Why do so few people live in Alaska?
7. What primitive peoples live in this region? What are their ways of living?
8. What are the leading imports and exports? What articles of food and clothing do we in Colorado get from Alaska?
9. How do the three regions of Alaska compare? (Pacific, Central, Polar.)
10. In what ways have reindeer been used in Alaska?
11. What are the main needs and problems of the people in Alaska? (Transportation, capital, men, fresh foods.)
12. How does Alaska compare with the United States in its means of transportation and communication?
13. What are the similarities and differences between life in Alaska and in Colorado?

14. What are the possibilities for future development in Alaska?
What are the opportunities for settlers in Alaska today?
15. What are Alaska's values to the United States?

Activities

1. Look at pictures and views of different parts of Alaska.
2. Plan a trip to Alaska from Seattle, telling about some of the attractions you would expect to see. Trace route on map.
3. Write to transportation companies to find out about routes, tickets, etc. Ask for maps, travel folders, and posters.
4. Post newspaper clippings about Alaska on the bulletin board. Discuss and locate on a map.
5. Read to find out how dogs have helped solve the problem of transportation in Alaska.
6. Read to find out about the discovery of gold in Alaska.
7. Have a child in the class or an adult who has visited Alaska tell about it.
8. Read texts, reference books, stories, and poems about Alaska.
9. Draw pictures of your impressions of Alaska.
10. Write poems, songs, and stories about the trip suggested above.
11. Write letters to Alaskan school children. (Through American Junior Red Cross, etc.)
12. Make a picture map of Alaska.
13. Study Alaska on the globe. What is its position with relation to air, land, and water transportation routes?
14. Prepare reports on: the story of salmon; the value of reindeer to the people of Alaska.
15. Make guide books with illustrations for travelers in Alaska.
16. Compare fur farming with that industry in Colorado. Visit a local fur farm.
17. Carve totem poles of wood and paint in appropriate colors or carve them in soap (in sections, wedged with tooth-picks).
18. Model Alaskan animals from clay or soap. Arrange in proper setting.

19. Make an Eskimo and dog team, using pipe cleaners, clay, soap, or wood.
20. Make a diorama of the Alaskan seacoast, showing fisheries, ship harbors, fiords, glaciers, villages, canneries, lumber camp, Indian village. (The scenes may be constructed in shirt boxes laid on their sides. Figures in appropriate costumes may be used.)
21. Make a "movie" from the pictures drawn from your information about Alaska, showing industries and life of the people or an original story.
(Suggested time for unit—3 weeks)

UNIT VIII. HAWAIIAN ISLANDS AND OUR PACIFIC POSSESSIONS

Problems for Developing the Unit

1. How do the ways of living in Hawaii compare with those of Alaska? (Homes, food, clothing, shelter, schools, ways of making a living.)
2. Why does Hawaii make an attractive vacation land?
3. Why is Hawaii called the "Crossroads of the Pacific"?
4. How do conditions in the Hawaiian Islands encourage interdependence between them and the United States?
5. What is the formation of these islands?
6. What are their principal industries and products?
7. Of what value to the United States are Wake, Guam, Samoa, the Philippines, and Hawaii?
8. How are these islands governed?
9. To what extent are the islands modernized?
10. How do the Trade Winds affect the climate?
11. What are the main problems of the people of these islands?

Activities

1. Show leis, grass skirt, steel guitar, or other articles from Hawaii.
2. Write to children on the islands to find out about their interesting places, homes, schools, activities, etc.
3. Show pictorially famous volcanoes, popular resorts, leading industries, sports, native gardens, deep sea fishing, birds, means of transportation, native villages, etc.

4. Read to find out why Hawaii imports foods, such as rice, flour, and dairy products.
5. Read texts, reference books, newspapers, magazines, and stories to find answers to problems raised by the class.
6. Listen to Hawaiian music; study their instruments; make simple ones.
7. Listen to the radio for news and music of these islands.
8. Read or tell stories, legends, and poems about the islands.
9. Write to commercial houses for booklets on the Hawaiian Islands and their products.
10. Make a map of the Pacific region showing the surrounding nations. Locate the islands and draw in routes of leading steamship companies and airlines.
11. Use the scale of a map and estimate the distance from Honolulu to the principal cities bordering the Pacific Ocean.
12. Give oral reports on: life on an Hawaiian plantation; the use of airplanes in the Pacific.
13. Make paintings and designs of colorful butterflies and fishes native to the islands.
14. Plan, prepare, and present a puppet show, of scenes of life in Hawaii or the Philippines.

(Suggested time for unit—3 weeks)

GRADE SEVEN

CENTER OF INTEREST—LIFE ON OTHER CONTINENTS

Some knowledge of the geography and history of the Old World is necessary for an understanding of our modern American life and of world affairs today. A study should be made of the relationship between the physical features of these areas and the social development that has been achieved. Many contributions have been made to our civilization by the Old World and a knowledge of these areas, their people, and their culture should help to give to our boys and girls a real appreciation of our own social development. Understanding of present, rapidly moving world events, as encountered in newspaper, magazine, radio, and screen, depends upon real knowledge of overseas continents and their people, both past and present.

General Objective

To develop an understanding and appreciation of the people of other continents and the ways in which their civilizations have contributed to our own.

UNIT I. HISTORY OF EARLY MAN

Overview

It is characteristic of children to exaggerate the importance of modern times and to underestimate and misunderstand the vital contributions and significance of the past. There is no reason why the study of a remote epoch cannot be made interesting to the child. Therefore, before entering upon a study of the history of the Old World, which will lead to a consideration of present-day problems, brief consideration should be given to a study of prehistoric peoples, because it has been possible in recent years to learn something about the men who lived before written records of history began.

Objectives

1. To develop an understanding and appreciation of how early man lived.
2. To assist the child in recognizing the contributions of early man to our modern civilization.

Problems for Developing the Unit

1. How do we find out about primitive man?
 - a. Fossils: plants, animal bones, animal tracks, shells, etc.
 - b. Clues found in caves: paintings on the walls, carved mammoth tusks, pottery, remains of camp fires, weapons
2. How did early man live and what problems did he have?
 - a. Food: kinds, how procured, how preserved, how eaten
 - b. Clothing: kinds worn in both warm and cold climates
 - c. Shelter: natural caves, artificial shelters—mound builders, lake dwellers
3. What are primitive man's contributions to modern life?
 - a. Fire
How man first became acquainted with fire
Ways in which early man procured fire
(Volcanoes, lightning, friction)

Uses of fire

(Warmth, cooking, light, making pottery, obtaining metals)

b. Tools and machines

Implements, weapons, lever, wheel

c. Domestication of animals

d. Domestication of plants

e. Communication and transportation

Signals: fire, drums, runners

Water travel: log, hollowed logs, boats of skin, rafts

Land travel: man, beasts, development of carts

f. Government

Family

Tribe—organization, customs, laws, religion, education

4. How was the life of early man different from ours today?

Activities**Approach**

1. Collect and discuss pictures and relics of cave men, animals of the Stone Ages, weapons, and scenes of primitive life.
2. Visit a museum, if possible, to view fossils of ancient people and animals, reproductions of villages, implements, and pottery.
3. See a moving picture or film strip on the work done by archaeologists.
4. Reading, by teacher, of something of interest concerning primitive man.

Informational

1. Collect pictures of tools of early man.
2. Read to find out how scientists have learned about people who lived before written records were made.
3. Read to find out about life in early times, the great ice sheet, changes in the earth's surface, how early man showed respect for the dead, differences in lake and land dwellers, etc.
4. Read or listen to stories about prehistoric animals.
5. Find the steps used for preparing grain in early times.
6. Read the myths and legends of ancient peoples.

7. Make a time line to show the period man has lived on the earth before history began.
8. Perhaps some member of the class can find a piece of flint and show the group how it can be used as a tool.
9. Have a Boy Scout in the class demonstrate some ways to make fire.

Expressional

1. Make and experiment with some primitive tools.
2. Develop a class museum on prehistoric man.
3. Model some clay jars and pots. Put some designs on them or wait until they are dry and paint them.
4. Share information gained about early man from reading by giving reports, holding a discussion led by the teacher, giving a dramatization, or exhibiting illustrations.
5. Make picture stories illustrating various activities of primitive man.
6. Prepare a book on primitive man, presenting both informational and pictorial materials.
7. Dramatize the life of a particular period.
8. Dramatize some of the activities used in securing food, clothing, shelter, etc.
9. Plan and act in pantomime scenes from prehistoric life.
10. Keep a vocabulary list of words peculiar to the unit.

Evaluational

1. Decide with children what is important to remember about the various phases of the study. Plan with the children for various types of check-up on material to be remembered.

Culminating

1. Prepare an exhibit of the articles you have made, the booklets you have prepared, and the pictures you have collected. Choose some members of the class to explain them to your parents who may be invited to see them.
2. Show a pupil-made "movie" portraying activities in the life of primitive man.
3. Give a puppet play about primitive people and animals.
(Suggested time allotment for unit—3 weeks)

UNIT II. EARLY CIVILIZATIONS

Objectives

1. To develop an understanding and appreciation of the part played by the early peoples of the Near East and Mediterranean lands in the development of European civilization.

2. To develop a background for an appreciation of the Christian religion.

Problems for Developing the Unit

1. Why did early civilizations develop in hot, dry areas of the earth? Why were they located along bodies of water?
2. How did the Nile River affect the life of the people who lived in its valley?
3. In what ways has Egypt contributed to the development of European civilization? (Architecture, art, sculpture, paper and writing, surveying, irrigation, system of laws, measurement of time, calendar, religion, literature, beginning of libraries, science, and crafts—pottery, glassware, metal work, basketry, dyeing, brick making, furniture, ornaments.)
4. What civilizations developed in the valley of the Tigris-Euphrates? (Babylonian, Assyrian.) How did they live?
5. What were their gifts to civilization? (Babylon: government, laws, writing, literature, astronomy, sundials, counting and measuring, architecture, industrial developments—lever, pulley, arch, wheel. Assyria: iron weapons, literature.)
6. What people lived in Syria in the early days of our history? (Phoenicians.) What were their cultural developments? (Ship building, trading, weaving, making of dye, glass making, alphabet.)
7. What peoples lived in Palestine? How did they adapt their lives to the environment? What were their religions?
8. In what ways did the Jews contribute to the development of our culture? (Old Testament, religious principles.)
9. Who were the Persians and what were their contributions to civilization? (Art, tapestry, jewels.) What lands did they conquer?

10. What do we know of the life and history of the early Greeks?
11. What influence does early Greek culture have on our life today? (Architecture, government, laws, idea of democracy, literature, philosophy, vases and pottery, sculpture, Olympic games, Marathon races.)
12. What are the main highlights in the history of the Roman Empire? What were the life and customs of the people?
13. What progress did the Romans make toward the development of civilization? (Road building, arches, bridges, aqueducts, law, government, Latin language.)

Activities

1. Collect and discuss pictures of Egypt, Babylonia, Palestine, Persia, Greece, and Rome, showing deserts, oases, monuments, people, cuneiform writing, hieroglyphics, modes of travel, buildings, tools, and objects of art.
2. Study maps of the Nile valley, the Tigris-Euphrates valley, the Jordan valley, and the Mediterranean region. Locate the leading ancient cities and the chief trade routes. Have pupils locate cities mentioned in the *Bible*, the *Arabian Nights Tales*, and Greek and Roman myths.
3. Make an excursion to see examples of early Greek influence in the architecture of your community. (Ionic, Doric, Corinthian columns, etc.)
4. Visit a museum to see pictures and models of famous early buildings: Parthenon, Coliseum, etc.
5. Compare and contrast nomadic and settled peoples.
6. Read about the interesting things these ancient peoples learned to do. Choose one that appeals to you and tell the class about it in a brief oral report.
7. Make a picture map of the Nile valley on a large sheet of paper or on the blackboard.
8. Read stories and myths of the early Greeks and Romans.
9. Construct an Egyptian scene or a Biblical scene on a table or on the floor.
10. Make a miniature clay tablet such as the Babylonians made, using a stick for a stylus, or bake some mud bricks in the sun and construct an Egyptian house.
11. Make models of Phoenician boats.

12. Model small vases in clay after the manner of the ancient Greeks.
13. Dramatize an Old Testament Bible story.
14. Using sand, clay, paper pulp, or a mixture of salt and flour, make a relief map of Palestine.
15. Make a list of a dozen new words you have learned and use them in sentences.
16. Prepare a list of books and stories you have read about the early civilizations.
17. Make a frieze showing the life of early Greece—sports, voyages, famous buildings, people in typical costumes, from myth and history, etc.
18. Discuss the things you have learned about the ancient peoples and write a story about some part of the discussion that has especially interested you.
19. Construct a moving picture on wrapping paper by drawing pictures with crayons of one of the ancient civilizations studied in the unit, depicting the life and customs of the people. Invite your parents to hear different members of the class explain the picture as it is being shown.
(Suggested time for unit—4 weeks)

UNIT III. EUROPE AND ITS PEOPLE

Objectives

1. To develop an understanding of the geographical factors which have influenced the history and life of the European peoples.
2. To develop a better understanding of the racial, social, economic, and governmental problems of the European peoples.
3. To develop an appreciation of the Old World background of the American people.

Problems for Developing the Unit

1. What are the main geographical regions of Europe?

Suggested classification:

- a. The British Isles
- b. Northern Europe (Norway, Sweden, Finland, Denmark, Baltic Countries)
- c. Western Europe (Netherlands, Belgium, France)

- d. Central Europe (Germany, Poland, Czechoslovakia, Austria, Hungary, Switzerland)
- e. Mediterranean or Southern Europe (Spain, Portugal, Italy, Greece)
- f. Eastern Europe (Balkans, Russia)

Note: Study these regions as made up of slowly changing surface features, but rapidly changing political divisions, both in the past and in the present.

- 2. What are the occupations and life of the people of the countries of these regions? What kinds of food, clothing, shelter, schools, and recreation are found in these countries? (Try to learn something of the "personality" of each nation.)
- 3. What are the most important factors in the historical background of the present countries of Europe?
- 4. How has the geography of Europe tended to divide it into small national groups rather than into a unified continent? (Mountains, seas, rivers, peninsulas, islands, swamps.)
- 5. What effects do climate, surface features, and location have upon occupations, products, and the distribution of peoples in Europe?
- 6. What was the nature of life in Europe during the Middle Ages? (Feudal, town, church, Crusades, new learning—writers, artists, scientists, inventors, religious leaders.)
- 7. What were the ways in which the Industrial Revolution changed man's way of life? (Transportation, communication, manufacturing.)
- 8. How important to the Europeans is trade and commerce within Europe and with the rest of the world? What products are sent to the United States? What products do we send to them?
- 9. What factors influenced the emigration of Europeans to the New World and to their colonial possessions? Why is the conservation of natural resources important in Europe?
- 10. What are the differences in race, family life, work, education, religion, and culture in the various regions of Europe?

11. What is the European background for our constitutional form of government? How did our Constitution develop from European antecedents? Compare our Constitution with those of European governments. How does it differ from that of Great Britain? (Written.)
12. What kinds of government exist in Europe today? How do those with a democratic background differ from those with totalitarian principles?
13. What is the present situation in Europe? What are the causes and what may be the effects?
14. What has been the contribution of European peoples to American life and civilization?

Activities

1. Prepare a bulletin board of maps, pictures, and cartoons, illustrating current affairs in Europe.
2. Observe and discuss a movie or film strip of one or several of the European countries.
3. Locate countries, cities, and surface features of Europe on the map as they are studied.
4. Read texts and reference books to gain information needed for studying the problems listed for developing the unit.
5. Listen to the recordings of compositions by famous European composers.
6. Gather and discuss news clippings and pictures of current events in Europe.
7. Read some of the stories and legends of ancient Greece, Rome, Scandinavian or Teutonic Europe. Read some of those about King Arthur, Alaric, Charlemagne, etc.
8. Use an encyclopedia or a reference book of some sort to locate some interesting facts about the British Isles and other important countries in Europe and report them to the class.
9. If it is possible, write letters to children of your own age in Europe. (Secure names from the American Junior Red Cross. See supplementary bibliography for other sources.)
10. Make lists of a few of the great people of several of the countries of Europe and write brief biographies of their lives and contributions. They might be statesmen, scientists,

explorers, musicians, artists, writers, etc. Bind the biographies into a "Who's Who."

11. Construct models of a monastery, medieval castle, or cathedral. Make the stained glass windows of the cathedral with bits of colored cellophane.
12. Collect and enjoy reproductions of pictures by European artists, both the old masters and the modern.
13. Learn to make a bar or pie-shaped graph of the leading products or exports of European countries.
14. Make a travel booklet of worthwhile things to see in Europe.
15. Play a geography game. Select two teams and send two pupils to the blackboard, one from each team. Each pupil writes as rapidly as possible the name of an European city, lake, river or mountain range, beginning with the letter "A". The next two pupils use the letter "B", etc. Keep score and see which side wins.
16. Learn folk songs and dances of several countries.
17. Have a program of musical numbers by European composers.
18. Make a frieze showing life in medieval times: castles, feudal life, Crusaders, cathedrals.
19. Make a class booklet showing, through illustrations and original writing, European contributions to American life and culture.
20. Prepare a Radio Quiz program, using materials studied in the unit.
21. Give a program of the folk songs, dances, and stories of European countries. Have an exhibit of dolls, showing the different festival costumes of the European countries, reproductions of famous European paintings, and work done by the pupils.

(Suggested time for the unit—11 weeks)

UNIT IV. AFRICA

Objectives

1. To understand the importance of Africa and its present and potential resources for the modern world.
2. To learn how the nature of a region affects the lives and habits of its people.

3. To have a knowledge of past and present colonial divisions of Africa and the importance of these colonies to the nations of Europe.

Problems for Developing the Unit

1. Who were the explorers and pioneers of the "Dark Continent" and what dangers and adventures did they encounter?
2. When and how did Europe gain a foothold in Africa?
3. How do the great deserts of Africa affect life?
4. What are the resources of the grasslands and how do their peoples live?
5. What kinds of products are found in Equatorial Africa?
6. In what ways is the Union of South Africa important to the British Empire and to the world?
7. What products do we in the United States sometimes secure from Africa? What products do we send to that continent?
8. What are the potentialities of Africa in resources, area, position, and future influence?

Activities

1. Show a moving picture, film strip, or pictures of Africa.
2. Locate some articles and pictures of Africa in magazines.
3. List products we use which may come from Africa and discuss the part of Africa from which they come.
4. Study maps of Africa and find out about the location, climate, mountains, rivers, deserts, cities, and political divisions of the continent.
5. Take an imaginary airplane trip from Cairo to Cape Town and describe the regions you fly over. Keep a record of weather conditions as you go.
6. Draw a map of Africa and with different colors indicate the regions which belong to the European countries. Put in the large rivers of Africa also.
7. Read texts, references, and stories telling about life on this continent.
8. Read and report to the class on the lives, work, and adventures of Livingstone, Stanley, Kruger, Rhodes, Mungo Park, Theodore Roosevelt, Martin Johnson, etc.

9. Prepare a large map on wrapping paper and on it draw or paste pictures of the animals of Africa.
10. Collect pictures and prepare a class book about the different peoples found in Africa. Note the different modes of living.
11. Discuss the effect of the slave trade on Africa and the effect of the discovery of gold and diamonds.
12. Have a committee find out who the Boers were and report to the class on the Boer War.
13. Consider why the European countries want land in Africa and what is happening there at the present time.
14. Make a diorama of different types of community life found in different parts of the continent: oasis, jungle, grasslands, etc.
15. Make a "zoo" of African animals of *papier-mache* or clay.
16. Develop a dramatization of Livingstone's rescue by Stanley and present it to another class or a group of parents.
(Suggested time for the unit—5 weeks)

UNIT V. ASIA AND ITS PEOPLE

Objectives

1. To develop an understanding of the differences between Eastern and Western culture.
2. To acquire an appreciation of Asia's contribution to civilization.

Problems for Developing the Unit

1. What countries are located in Asia?
2. What is the relation of the physical features to the ways of living in these countries? (Food, clothing, shelter, earning a living, recreation.)
3. What interesting facts may be discovered about the ancient civilization of China?
4. What is the religious, cultural, and educational background of the Chinese people?
5. How has Japan's island location affected its history and mode of living?
6. What effect has the increase in Japanese population had upon the expansion of Japan and upon its industrial and commercial development?

7. How do the people of India make their living?
8. What is the caste system and how has it affected the social structure of India?
9. What is India's importance to the British Empire?
10. What are the leading products of the Malay peninsula and to what extent are they essential to present-day living?
11. What is the nature and importance of that part of Asia controlled by Russia?
12. What means of transportation and communication are used in and between Asiatic countries?
13. In what ways have Asiatic countries changed in modern times?
14. What are some of the major problems confronting Asiatic peoples?
15. What products do we secure from Asiatic countries and what do we in turn send to them?
16. What contributions has Asia made to the rest of the world? (Art, philosophy, commercial products, literature.)
17. What role does Asia play in international affairs?

Activities

1. Study maps of Asia to learn as much as possible about the various countries: location, surface features, cities, climate, etc.
2. Through picture study—bulletin board and in books—learn something of the “personality” of these countries.
3. Visit an art gallery or collection to see Oriental art.
4. Make a collection of Oriental art in the classroom.
5. Describe and taste samples of Oriental foods, such as rice bread, soy bean bread, bamboo sprouts, Chinese noodles, Chinese tea, etc.
6. Read stories of children and youth in Asia.
7. Read texts and reference books to find information for studying pupil problems and problems listed for developing the unit.
8. Make a “Believe It or Not” of remarkable facts about Asia.
9. Read about and give reports on the various religions of India.

10. Make a collection of different textiles used in the Orient and discuss how and where they are made. (Silk, cotton, rattan, camel's hair cloth, rice paper, etc.)
11. Discuss the caste system of India and show how it resembles the classes of society in the Middle Ages in Europe.
12. Compare schools and education in the Orient and in the United States.
13. Make a product map of Asia. Place products such as tea, silk, rice, and tin on a table. Then run strings to the places on the map where such products come from.
14. Try to grow some rice if your school room is warm enough, or grow some soy beans.
15. Make models or draw pictures of the different methods of transportation used in Asia, such as camel caravan, elephant, ox cart, sampan, wheelbarrow, jinrikisha, trains, trucks, airplanes.
16. Make finger paintings of Oriental subjects and scenes.
17. After studying Chinese and Hindu legends, fables, and history, prepare a puppet show, depicting the adventures of Marco Polo in the Orient; Kublai Kahn, the Mongol emperor; or Confucius, the famous teacher. Some of the books you have read will give you good ideas for your show. Invite your parents to see the play.
(Suggested time for the unit—8 weeks)

UNIT VI. AUSTRALIA AND THE ISLANDS OF THE PACIFIC

Objectives

1. To develop an appreciation of the potentialities of Australia as a coming world influence.
2. To understand the importance of the Pacific Islands, especially in regard to strategic position and resources.

Problems for Developing the Unit

1. In what part of the world is Australia located?
2. What effect has the isolation of Australia had upon the plant and animal life of the continent?
3. How do the seasons in Australia differ from ours?

4. What people live in Australia, New Zealand, and the islands of the Pacific and how do they make their living? What are their most important products?
5. What interesting facts can be found concerning the period of exploration and settlement in Australia and New Zealand?
6. What nations have territorial interests in the Pacific? In what ways do these interests create conflicts between nations?
7. What social progress has been made in Australia and New Zealand?
8. What are the features of Australia, New Zealand, and the islands of the Pacific that are attractive to visitors?
9. What strategic positions are held by Hawaii and other small islands in the Pacific?

Activities

1. Plan a picture exhibit of Australia. Divide the class into committees and look up different things, such as animals, birds, plants, natives, weapons, cities, etc.
2. List reasons why Australia is so sparsely populated.
3. Read texts, references, and stories about the life and history of Australia and New Zealand.
4. Make a boomerang and show how it works.
5. Prepare an exhibit of spices which come from the Pacific regions, such as cinnamon, cloves, ginger, all spice, nutmeg, etc.
6. Discuss the products for which the Netherlands East Indies are noted and consider those that are used in the United States.
7. Discuss the seasons in Australia and New Zealand and why they are opposite to those in the United States. Locate the International Date Line and discuss what happens when people cross it and what differences it makes in listening to radio news from the other side of the Pacific.
8. Compare the Philippine and Hawaiian Islands as to area, population, inhabitants, products, position, and importance to the United States.

9. Put parallel lines on the blackboard. Show on the first the important dates in exploration and colonization of America beginning with its discovery. On the other show when Australia and New Zealand were explored and when the first settlements were made there.
10. If possible, ask a teacher or some adult to tell the class about a trip to the Hawaiian Islands, Philippine Islands, East Indies, or some other place in the Pacific.
11. Make a picture map of Australia, showing vegetation, animals, industries, location of cities.
12. Make kangaroos, koala bear, rabbits, and other characteristic Australian animals of clay or *papier-mache*.
13. Give a hand-made "movie" of life in Australia, showing the people, activities, animals, and plants.
(Suggested time for the unit—5 weeks)

GRADE EIGHT

CENTERS OF INTEREST—COLORADO AND THE DEVELOPMENT OF THE UNITED STATES INTO A GREAT NATION

This series of units deals primarily with our state and with the nation. Considerable emphasis is given to developing the history of America and its institutions. Some review of the fifth grade study of the discovery, exploration, and settlement of the country is given in the second unit. The more complex history of the establishment and growth of the nation, with its struggles and progress, is developed in the middle units. The last unit is intended to aid pupils in gaining an understanding of their nation in the world today.

UNIT I. COLORADO: OUR STATE IN A MODERN WORLD

Overview

This unit is planned for the purpose of helping pupils know their own state and its place in a modern world. A knowledge of its history is necessary in order to understand its present development. Considerable emphasis should be placed on the resources of the state and how Colorado people have used or controlled

them in order to make a living and to develop the state. The need for conservation of these valuable resources should be studied. Differences in the surface features and climate of the various parts of the state should be pointed out with attention to how man has made different adaptations to living in the different environments.

Pupils should learn about how the government and the schools of the state have developed and how they function. They should learn how to participate in the functioning of each and gain a desire to be a contributing member in the life of their community.

Possibilities for making a living in the state should be considered, because boys and girls of this age are beginning to think about vocational choices and training. This study should be as realistic as possible.

Cultural developments in the state should be a rich and important part of the study. Colorado artists, writers, musicians, educators, and others have made real contributions to the culture of the land. Many stories, poems, and songs have been written about the state and the Rocky Mountain region. These our pupils should know. Cultural advantages in the form of museums, art galleries, orchestras, little theaters, radio stations and programs, etc., should be understood and appreciated by Colorado boys and girls.

Possibilities for the state's future in economic and social development should be studied. Excursions into the community and interviews of well-informed citizens will lend considerable light on this subject. Altogether, the experiences and study in this unit should help the pupil become better oriented to the Colorado environment of which he is a part.

Objectives

1. To learn about man's use of natural resources in Colorado.
2. To gain a knowledge of Colorado's history.
3. To gain an awareness of the opportunities for earning a living in Colorado.
4. To develop a sense of responsibility to the community and to the state government.

5. To gain a knowledge of the general relationship of one's state and community to the nation and to the rest of the world.

Problems for Developing the Unit

1. What are Colorado's principal surface features, climate, and natural resources? How were these formed and shaped by nature?
2. How have the people of Colorado made use of the natural resources? How have they overcome natural difficulties in transportation and farming? In what ways have they conserved natural resources? What conservation problems still face the state today?
3. What Indian tribes lived in the various parts of the state before white men settled here? Which still remain? What contributions have they made to our culture? (Art, music, dance, etc.)
4. What white men first visited this region?
5. What is the history of the early exploration and settlement of the state?
6. How did the United States acquire this region?
7. How and why did this state develop so rapidly?
8. Which explorers and pioneers played important roles in the settlement of this state?
9. How did government develop in Colorado?
10. When did Colorado become a state?
11. What is the organization and function of our state, county, and local government?
12. What ways of living and earning a living developed in the state?
13. What Colorado products are important to the rest of the world?
14. How may we conserve and develop to best advantage the state's natural and human resources?
15. What cultural achievements and advantages have developed in the state? (Art, music, dance, drama, literature.)
16. What educational opportunities are available for Colorado children and youth? What inequalities are present? How might these be lessened? How do the State Department of Education, the county school system, and the local school system aid and control the schools?

17. How do people in Colorado spend their leisure time?
18. What transportation and communication facilities are available in this mountainous state? How have these been developed? What provisions are made for the safety of people on highways and streets?
19. What are the chief population centers of the state and why are they located where they are? What are the main cities and their outstanding features?
20. What is Colorado's place in the nation with regard to location, production of needed supplies and services, exchange of goods, health and recreational advantages, and cultural contributions?
21. What vocational opportunities are there for young people in this state?
22. What can we do to help our state continue to progress in the future? (Work, community projects, civic responsibility, etc.)

Activities

Approach

1. Visit a place of historic interest in the community.
2. View motion pictures, film strips, slides, or photographs of Colorado scenery and points of interest.
3. Interview old residents to learn about the life of Colorado pioneers.
4. Tell about recent trips taken in different parts of the state.
5. Study a map of Colorado, locating places pupils have visited, and discussing differences of the various sections.
6. Write to Chambers of Commerce of different cities and towns in the state for information and pamphlets.
7. Write to railroad, bus, and oil companies for pictures, maps, and booklets about Colorado.

Informational

1. Take field trips to study land forms and rocks of the region.
2. Make collections of Colorado rocks, leaves, and flowers.
3. Read books, magazines, and newspapers to gain information relating to the problems listed for developing the unit.
4. Discuss questions raised by the class and listed in the unit.

5. Listen to or read about weather forecasts and learn how the weather varies in the different parts of the state.
6. Make a Colorado scrapbook of pictures and articles about the state from newspapers and magazines.
7. Prepare an exhibit of articles and pictures showing pioneer life in this state.
8. Read stories and novels about Colorado. Have oral or written reports. (Dramatic, illustrated.)
9. Examine old newspaper files to locate information about our early history.
10. Obtain U. S. Geological Survey maps of your district and study them.
11. Visit a session of court, the court house, state offices, or institutions to learn about their personnel, work, and services.
12. Ask the county agent, forest ranger, or game warden to talk about conservation in the state.
13. Make an illustrated list of occupations and products found in the community.

Expressional

1. Write a community history for your town or county.
2. Make large pictorial maps showing (a) discovery and settlement of the state, (b) industries and products, (c) scenic and recreational advantages.
3. Write, in modern journalistic style, newspaper accounts of incidents from Colorado history.
4. Dramatize the establishment and development of an industry. (Mining, irrigated farming, tourist trade, etc.)
5. Learn Western pioneer dances, cowboy ballads, and miners' songs.
6. Read or tell to the class interesting stories of early Colorado.
7. Learn songs and dances of different nationalities who came to Colorado. (Welsh, Finn, German, Irish, Spanish, etc.)
8. Model wild animals of Colorado from clay or make them of *papier-mache*. Give them appropriate settings and make them into a class museum.

9. Write to school children in other parts of the state to learn about their schools, farms, towns, and ways of having a good time.
10. Write a poem or song about Colorado.
11. Sing Colorado songs.
12. Make a large sand table map of Colorado, showing the relief of the state.
13. Make a frieze of Colorado scenes for the classroom.
14. Make diorama scenes of Colorado. (Cardboard boxes laid on their side make good settings for these.)
15. Make a class book about the life of boys and girls in Colorado: how you go to school, your home, school, work and play.
16. Make a museum exhibit of samples of Colorado products for your classroom.
17. Prepare a "Hall of Fame," including Colorado's famous statesmen, educators, artists, authors, etc. Write biographies of each, nominate them to the "Hall of Fame" (orally), and place those approved by the class in a booklet with pictures of each when possible.
18. Construct models of mines, irrigation projects, and winter or summer resorts.
19. Have a panel discussion on conservation of soil, forests, minerals, wild life, vacation resources.

Evaluational

1. Summarize in group discussion the things learned in the course of the unit.
2. Have a radio-type "quiz" program on Colorado.
3. Make an historical map of the state.
4. Discuss the possible future occupations of pupils now in school, considering the history, geography, and resources of the state or community.

Culminating

1. Exhibit materials collected or made by the children during the unit.
2. In a program for parents and other pupils, show by dramatization the development of your community. (Use a narrator, as in "Our Town.")

3. Dramatize an early "miners' court" and show the development of our present judicial system.

UNIT II. THE EARLY DEVELOPMENT OF THE UNITED STATES AS A NATION

Problems for Developing the Unit

1. What events led to the discovery of the New World? (Search for route to India, and the voyages of the Vikings, Columbus, Magellan, John and Sebastian Cabot, Americus Vesputius, Verrazano, etc.)
2. Who were the early explorers on this continent and what did they accomplish? (Spanish, French, English, and Dutch.)
3. How did the colonies of the different nations develop? How did they differ?
4. How did the French and Dutch lose their lands in the North-eastern area?
5. How did England govern her North American colonies?
6. What events led to a break with England?
7. How did the colonies gain their independence through the Revolutionary War?
8. In what way did the colonies govern themselves during the conflict?
9. Why were the Articles of Confederation unsatisfactory?
10. What problems faced the Constitutional Convention and how were they solved?
11. What were the main features of the new Constitution and the government it set up?
12. How was the new government put into operation?
13. Why were amendments added to the Constitution?
14. Who were the leaders in the development of the colonies, the Revolutionary War, and the forming of the nation?
15. To what extent had democracy developed in government and in ways of living?
16. What were some of the early industries? What methods and materials were used? Which developed into important industries in modern times?

Activities

1. Arrange a bulletin board of pictures and maps about the discovery of America.
2. See a motion picture of colonial times.
3. Study historical maps to learn about the location of early voyages and expeditions of discovery, settlements, and colonies established.
4. Read textbooks and other references to gain information about the problems for developing the unit and questions raised by the student.
5. Study the historical significance of such holidays as Columbus Day, Hallowe'en, and Thanksgiving.
6. Read stories or books telling about the life of this period.
7. Collect and examine pictures of discovery, exploration, settlement, and colonial life. Locate and study those in books.
8. Study colonial furniture, architecture, and house furnishings through pictures and reading.
9. Read the Declaration of Independence, accounts of the Constitutional Convention, and the Federalist Papers.
10. Discuss the Bill of Rights and discover the reason behind each item in it. Consider how each operates today.
11. Compare and contrast materials and methods used in the Revolutionary War with those used in modern war.
12. Compare life of the early settlers with colonial life and modern life. Clarify the comparisons by drawings.
13. Read poems of the period, such as "The Pilgrims Came," by Annette Wynne and "Paul Revere's Ride," by Henry W. Longfellow.
14. Trace the various campaigns of the Revolutionary War on a map as they are studied.
15. Discuss the three departments of the government and their chief duties.
16. Read the Preamble to the Constitution aloud. Some pupils may want to memorize it.
17. Read stories of the home and community life of the Dutch, French and English colonists.

18. Have individual reports on the amendments to the Constitution.
19. Read biographies of early American leaders and nominate names for an "Early American Hall of Fame."
20. Make a collection of famous sayings about the period, such as: "First in war, first in peace, first in the hearts of his countrymen."
21. Construct a time line showing the dates of the various discoveries, explorations, settlements, and conflicts of the period.
22. Construct models of colonial settlements.
23. Make a class book of pictures and stories telling about the life of George Washington.
24. Make a "Who's Who" of early American leaders of the period.
25. Carry on activities such as were common to colonial home life. (Making candles, carding wool, making dyes, making soft soap, sewing samplers, making rag rugs.)
26. Learn colonial dances, such as the minuet or Virginia reel.
27. Dramatize such scenes as a colonial school, observance of a holiday, town meeting, or session of legislature.
28. Give one-act plays about the planning of the Boston Tea Party, the Signing of the Declaration of Independence, and the First American Flag.
29. Give a puppet play of a colonial school or an historical event.

UNIT III. GROWTH AND EXPANSION OF THE NEW NATION

Problems for Developing the Unit

1. When and by whom was the country west of the Appalachians settled? By what routes and by what means did the settlers travel? How did they live?
2. How was the land west of the Mississippi acquired?
3. What other countries still had claims in the new world? (England, Spain, Russia.)
4. What wars were fought during this period? What caused them and what were their outcomes?
5. What internal problems tended to divide the country? (Slavery, banks and money, tariffs, states' rights.)

6. What was the Monroe Doctrine and how does it operate today?
7. Who were the leading national figures from 1810 to 1850?
8. How did industrial development influence the growth of the nation?
9. How did improvements in methods of transportation and communication influence our progress and development?
10. What social reforms were accomplished during this period?
11. What changes took place in political parties?
12. What were the outstanding cultural developments of the period? (Education, music, art, dance, literature.)

Activities

1. See a film about Daniel Boone.
2. Collect pictures of clipper ships, early steamships, and early locomotives.
3. Collect coins and stamps of the period for a class museum exhibit. (Coins are fairly common but early stamps are very rare.)
4. Read textbooks and other references to gain information about each of the problems listed for the unit.
5. Make maps showing the expansion of territory and admission of new states, and charts showing the growth of population.
6. Collect and post present-day references to the Monroe Doctrine from newspapers and magazines.
7. Read stories and write dramatizations about the search for gold, life on a cattle ranch, storms, or travel.
8. Compare and contrast modern agricultural equipment and methods with those in use before the Civil War.
9. Read several examples of the literature of the period. Find pictures and brief biographies of the writers.
10. Read to find how and why our present political parties came into existence.
11. Compare elementary schools of the 1830's with those of the present day. Note the development of high schools, colleges and coeducation.
12. Make a list of famous nicknames of the times, such as the "Forty Niners," "Lone Star State," etc.

13. Construct picture maps showing: Oregon Trail, Santa Fe Trail, Mormon Trail, Pike and Long expeditions, route of Lewis and Clark.
14. Learn the songs and dances which accompanied the settlers across the plains and mountains to the Pacific and back to the Last Frontier.
15. Make posters or cartoons showing the feeling about states' rights, the tariff, national banks, the factory system, life in cities, temperance, and women's rights.
16. Continue the time line started in the previous unit.
17. Construct a model of a frontier home.
18. Make a "Who's Who" of important men of this period.
19. Write a diary of a boy or girl crossing the country in 1840 in a covered wagon.
20. Make a picture dictionary of such words as: prairie schooner, buffalo, pioneer, post-rider, or emigrant.
21. Dramatize the discovery of gold in California.
22. Show a hand-made movie of the journey of a covered wagon or the adventures of a pioneer such as Daniel Boone or George Rogers Clark.
23. Have a puppet play about pioneer life with cowboys, pioneers, Indians, and post-riders for characters.
24. Show a pupil-made "movie" of the development of transportation or communication.
25. Conduct a pioneer school for one day. Pupils and teacher wear old-time costumes. (Dunce caps, slates, quill pens, ABC's, copy work, reciting lessons in unison, oral reading around the class, etc.)
26. Give a real old-time pioneer party and invite the parents.

UNIT IV. DISUNION AND RECONSTRUCTION

Problems for Developing the Unit

1. What were the main differences which led toward conflict between the North and the South? (Geographic, economic, social, political.)
2. How did westward expansion heighten the tension between the two sections?
3. What political developments led up to war?

4. How did the North win the war?
5. Who were the military and political leaders of the two sections?
6. How did the war influence our relations with other nations?
7. What policy did the North follow in dealing with the defeated South?
8. What were conditions in both the North and the South after the war?
9. How did the South recover from the war?
10. In what ways did the Civil War strengthen the federal government and our idea of democracy?

Activities

1. By an exhibit of pictures or drawings show the differences that existed between the North and the South.
2. Interview people who lived at the time of the Civil War.
3. Locate information about the problems listed for the unit in reference and text books.
4. Allow good readers to report on the picture of slavery given in *Uncle Tom's Cabin* and *Huckleberry Finn*.
5. Read to find out how the Underground Railroad operated.
6. Read the two sections of the Constitution that refer to slavery, and then read Amendments Thirteen and Fourteen.
7. List the compromises and agreements by which new territories were divided into "free" and "slave" territory. Illustrate the list with maps. Show the status of the section in which you live, and of the section where your parents or grandparents lived.
8. Read and give special reports about: Eli Whitney, plantation life, slave quarters, Negro folk songs.
9. Appoint a committee to study and report on Lincoln, Douglas, Lee, Clara Barton, Lincoln-Douglas Debates, Kansas-Nebraska Act, John Brown's Raid, and the Dred Scott Case.
10. Locate important places of the period on the map. (Gettysburg, Richmond, Fort Sumter, Vicksburg, Appomattox, etc.)

11. Have a panel discussion on new methods and materials used in the Civil War. (Breech-loading rifles, balloons, steamships, iron-clad ships, railroads, screw propellers.)
12. Dramatize a meeting between a slave-owner and an Abolitionist after the Dred Scott Decision.
13. Write articles dealing with the same events as they might have appeared in papers published in Atlanta and Boston.
14. Make a booklet telling how the wounded were cared for during the Civil War.
15. Collect pictures and write brief biographies of the leaders of both sides. Have oral reports on these men.
16. Read poems that deal with this period and compile a bibliography from your reading.
17. Sing the songs of the war.
18. Have an informal debate on the question: "Does a state have the right to withdraw from the Union?"
19. Read Lincoln's Gettysburg Address aloud.
20. Construct models of the Monitor and the Merrimac.
21. Make a time line for the period from 1845 to 1861 and indicate on it events which led to the Civil War.
22. Make a collection of famous quotations from the Civil War period, such as Lincoln's "With malice toward none, with charity for all—let us strive on—to do all which may achieve a just and lasting peace among ourselves and with all nations."
23. Give a program for parents from speeches, songs, poems, stories, and narrative accounts or dramatizations dealing with the Civil War period. Suitable anniversaries for presentation of such a program come in February and April.

UNIT V. THE NATION PROGRESSES (1872-1935)

Problems for Developing the Unit

1. How did the nation acquire new territory after the Civil War? (Alaska, islands in the Pacific and Atlantic.)

2. During this period what marked advances were made in:
 - a. Industrial development? (New methods and materials, invention, trusts and "trust-busting," transportation, communication)
 - b. Social development? (Suffrage, rights for women, labor unions, settlement houses, social service)
 - c. Political development? (Constitutional amendments, Australian ballot, new cabinet members, great political campaigns, shifting political parties, increased centralization of power in federal government)
 - d. Cultural development? (Music, theater, literature, art, dance)
 - e. Education? (Rise of high schools, state-owned universities and colleges, increased state support and control of public schools)
3. What were our relations with other nations and how did our foreign policy change?
 - a. Applications of the Monroe Doctrine in Latin America
 - b. Gradual improvement of relations with nations to the south
 - c. Pan American Union
 - d. "Open door" to China
 - e. World War
 - f. League of Nations
 - g. Disarmament conferences
 - h. Kellogg-Briand and "Nine-power" treaties
4. Why did our foreign trade and investments greatly increase when our own resources and production were greatly increasing?
5. What part have immigrants played in American life?
6. What factors have caused the rapid growth of our large cities? Cite examples.
7. How did this nation become a great world power?
 - a. Growth of wealth and population
 - b. Spanish-American War
 - c. Panama Canal

- d. World War
- e. Power of trade and markets

Activities

1. By means of maps show how we have acquired territory since the Civil War. Show the method of acquisition, dates, value for defense, and products and markets these territories or possessions provide.
2. By reading, interviewing, and questioning discover what forms of local government are found in your community and county. List the various officials and their duties and report on them.
3. Interview grandparents or older people as to the first elections they remember or in which they participated. Collect information about political parties, candidates, issues, and results, as well as methods of voting. Give reports to the group.
4. Investigate the history of your school district. From board members, county superintendents, teachers and others, learn when and why the district was organized, changes in school population, sources of revenue for support of schools, changes in qualifications for teachers, and other pertinent information.
5. Gain information about the problems listed for developing the unit from texts and reference books. Hold informal discussions of the findings.
6. Read stories about Roosevelt's Rough Riders.
7. Investigate reasons for the addition of amendments to the Constitution.
8. Have a panel discussion on improving the machinery for democratic government. (Australian ballot, initiative, referendum, recall, direct primary, popular election of senators.)
9. Make booklets about inventors and inventions, growth of railroad, steamship, airplane, and automobile transportation.
10. Prepare and present reports on various industries. (Steel and iron, artificial fibers, petroleum, mining and smelting, etc.) Tell what inventions and developments made these industries possible.

11. Compile a list of outstanding authors of this period. Read examples of the works of as many as possible. Hear works of the outstanding composers, and sing their songs. Collect copies of pictures and the artists, pictures of statues and the sculptors.
12. Make a scrapbook or collection of newspaper and magazine references to treaties and relations with foreign nations.
13. List materials in common use and their sources in other lands. Collect samples. (Tin, chromium, rubber, mica, antimony, hemp, vegetable oils, burlap, asbestos, nickel, hardwoods, certain foods, etc.)
14. Show by bar graphs the value of foreign trade in five or ten-year periods for the past hundred years.
15. Sing the songs of the Spanish-American War, the World War, and present patriotic songs.
16. Make a class book about the big cities of America. Include descriptions, pictures, and maps.
17. Make a class book about the contributions of immigrants to American life. (Mary Antin, Edward Bok, Michael Pupin, etc.)
18. On a large map of the United States, indicate where various racial groups have tended to settle. (Use pictures and words.)
19. Have an "Exposition of Progress" or National Fair, to show visitors and other pupils, materials and information collected about the progress of the nation.

UNIT VI. THE UNITED STATES IN THE WORLD TODAY

Problems for Developing the Unit

1. What vast stores of natural resources does the United States possess today? (Oil, minerals, soil, stone, timber, water, water power, etc.) In which natural regions are these found?
2. In what ways have we put our natural resources to use in the development of industry? How have we tried to conserve these resources? Where do we allow waste?
3. What goods are produced in this country by mass production methods?

4. What problems of labor and of living have accompanied the industrial development?
5. What are our largest cities and what are their reasons for being?
6. Of what importance is American agriculture to this nation and to the rest of the world? What problems does it face?
7. How do commerce, trade, and finance contribute to the strength and progress of the nation?
8. What freedoms and rights are enjoyed by the American people?
9. What progress have we made in the development of American culture? (Art, music, dance, literature, ways of living, etc.)
10. What standards of living are enjoyed by the American people?
11. What role is played by the school in American life? What is its role in maintaining and strengthening the democratic way of living? What are the aims of our public schools? How are they controlled and financed?
12. What is the purpose and power of propaganda? How is it used in the news and advertisements? What are the tools of propaganda? How may it be recognized and studied?
13. What function does religion play in modern American life?
14. What are some of the things we should know about buying goods? (Quality of materials, best buys, information on labels, tests of goods, ingredients, etc.)
15. What kinds of transportation and communication are available at the present time?
16. What vacation regions and resorts and scenic wonders have we in this country?
17. What are common problems faced by the American family? (Earning a living, housing, use of leisure time, security, safety, wise buying of goods and services.)
18. What are the present trends in government?
19. What types of service does the government offer its people and states?
20. How is the government supported?

21. What opportunities are there in the United States for making a living?
22. What social progress has been made in the country? What problems exist?
23. In what ways do the American people spend much of their leisure time?
24. What is the state of our foreign trade?
25. What is our "Good Neighbor" foreign policy? How has it worked?
26. What is the role of the United States in world affairs today?

Activities

1. Discuss advantages of living in the United States.
2. Study maps showing geographical reasons for relative positions of agricultural belts, industrial regions, and subsequent development of commerce and trade.
3. View films on conservation of soil and other natural resources.
4. Take a field trip to investigate methods of soil conservation.
5. Collect newspaper and magazine references to labor and labor unions.
6. Take an excursion through a bank. Have a banker explain the functions of banking.
7. Visit a weather bureau to learn about its work. Set up one of your own at school on a small scale.
8. Make a collection of native American resources, such as minerals, stone, lumber, etc.
9. Interview members of labor unions and non-members as to the purpose and advantages or disadvantages of membership.
10. Find out what kinds of insurance are written by local agencies.
11. Read widely in texts and reference books for information on the problems listed for the unit and related topics.
12. Interview a school official or board member to find out how schools are supported and controlled.
13. Ask a Forest Ranger or Soil Conservation Service man to tell you about this work.

14. Interview a Civil Service employee. Find out how people acquire Civil Service appointments and what kinds of positions are gained this way.
15. Find out who collects taxes in your community and how the money is used.
16. Visit a court and secure an interview with the judge to learn about the court's functions.
17. Make a collection of old and new textbooks.
18. Write to the State Department of Education and ask about its officers and its services.
19. Find out something about John Dewey's ideas on education and write an account of how "doing" has helped you to learn.
20. Visit a newspaper plant or radio station.
21. Visit a large industrial plant if near enough.
22. Collect and arrange an exhibit of American art.
23. Make an excursion to see a housing project.
24. Make a collection of advertisements of American goods produced by mass methods. (Automobiles, clothing, foods, etc.)
25. Interview a local government official to find out what rights and freedoms are enjoyed by American people.
26. Read many examples of modern American prose and verse suitable for young Americans.
27. Make a collection of new books published in this country.
28. Make an exhibit of American magazines and newspapers.
29. Write letters to school children in some of the countries we consider "neighbors" in order to become better acquainted with at least a few of our good neighbors.
30. Analyze news stories and advertisements for propaganda and study the purpose of each. Look for glittering generalities, name calling, indorsements, etc.
31. Study the buying of common articles, purchased by the pupils—pencils, paper, soft drinks, candy bars, comic magazines, etc., in order to determine quality, content, and best buys.
32. Make a list of all the international conferences in which we have participated in recent years.

33. Make an "educational film" showing the development of American agriculture, the use of agricultural products in industry, and the trend from staple crops to greater production of dairy products, meat, fruit, and vegetables.
34. Have group reports on various industries, showing locations, products, and markets.
35. Have a panel discussion of art, literature, music, dance, and drama in the present time.
36. Make a frieze about "Our America" for the school's halls.
37. Make a class book of pictures and accounts on "America Today."
38. Sing songs about our country. Sing other songs by American composers. Listen to recordings of modern American music.
39. Make a large picture map of the United States showing National Parks.
40. Draw "then and now" pictures showing the differences between early and modern schools.
41. Read aloud poems by Robert Frost, Carl Sandburg, Amy Lowell, and other American poets. (Choral speaking would enrich this experience.)
42. Make a large illustrated book about American cities.
43. Make a large map of the world (wrapping paper) and show on it trade routes by which we ship and receive goods. Indicate what goods are being shipped.
44. Make a book of workers, showing many different ways of making a living in this country.
45. Show ways of making a living in America by means of a shadow play.
46. Give a play in the "Living Newspaper" manner, showing glimpses of modern American life.

EVALUATING THE PUPIL'S WORK

Evaluation should be in terms of objectives. Evaluation of a social studies unit should be in terms of pupil-teacher planning. This means that near the beginning of a unit teacher and pupils should discuss and list (1) Things we might do in this unit, and (2) Things we should study (topics or problems). Then the

evaluation should be in terms of how well these objectives were realized.

Evaluation should be a continuous process. We should not wait until the end of a unit to engage in evaluation. Many classes now spend a little time at the end of each day to take stock of what has been accomplished toward the unit, which things were done best, and which needed improvement. Planning for the next day may accompany this type of evaluation. At the close of an activity period, excursion, or reading period, it is well to have short, informal evaluation. After art or construction work has been done, children should exhibit their work and discuss progress and values.

Pencil and paper tests are not as all-important in evaluation as they once were, but they are still very necessary and useful instruments of evaluation. They should not be neglected, but must be well constructed. Some of the more commonly used types of objective tests are: completion, multiple choice, true-false, yes-no, and matching. Such tests may be made for testing pupil outcomes in terms of information, understandings, points of view, and ability to do critical thinking. The essay type of test has many merits, for it permits the pupil to express more freely his knowledge and ideas. But this type of test is more difficult to score and requires more time than the objective type. Pupils may often participate in developing their tests by submitting questions or items to be included by the teacher.

Several other means of evaluation are being developed and widely used these days. Direct observation, listening to what children say (in and out of class), watching their behavior, noting their interests, studying their written expression, observing their creative work—these means of evaluation are coming more and more to the fore as teachers become more skilled as students of child development.

Informal or round table discussions, panels, and "Quiz Kids" programs are used by many teachers in evaluation of units. The culminating activities themselves (plays, programs, games) are evaluational, in that they review outcomes of the unit experiences. Evaluation should be a cooperative endeavor, and both pupils and teacher should be involved in the process.

The teacher himself should evaluate each unit in terms of his objectives. Many teachers now develop their own check lists

which they use as aids to evaluating each unit experience. They include such items as:

1. Have my pupils grown in the ability to work in groups?
2. Have my pupils gained a better understanding of their social and natural environment?
3. Have individual differences of pupils been given sufficient attention in the type of learning experiences provided?
4. Have my pupils grown in the ability to locate information and apply it to the solution of their problems?
5. Do my pupils show proper attitudes toward democratic living through their behavior?

Standardized tests in social studies have relatively little value in measuring the outcomes of a unit, because they do not usually cover the same scope of subject matter and activities which has been included in a particular unit. They have some value, however, in measuring the general knowledge of a pupil in the social studies field.

SUGGESTED ADAPTATIONS OF THIS PROGRAM

Transition from 1936 to 1942 Course

The first of the two major changes made in the 1942 Course in Social Studies is that, in grades five through eight, geography, history, and civics are fused into one course. This was true in the 1936 Course for grades one through four. The 1942 Course carries the same idea through all of the grades. This change does not mean that geography, history and civics are no longer taught, but that they are taught in their relationships to each other. Some units deal mainly with geography while some are predominantly historical. Wherever possible, all three are developed together. It probably would be well for the teacher to point out to children in the intermediate and upper grades *that they are studying geography, history and civics*, but they are studying them together so that each can be better understood. This same point might be explained to parents.

Neither does this change mean that schools, to use the New Course, must have "fusion" texts in which geography, history and civics are developed together. *This Course of Study can be used with separate geography, history and civics texts.* The teacher will need to study the texts used to find the chapters

which fit the units given in the course. In counties having uniform texts, a teacher committee, headed by the county superintendent of schools, could do this work for the entire county.

The second major change is in the grade placement of some of the centers of interest. The following table shows these changes.

Grade Placement of Centers of Interest

Grade	1936 Course	1942 Course
I	The School and the Home	Living in Home and School
II	The Community (How the Community Helps the Home)	Living in the Local Community
III	Community History and Environment	Living in the Wider Community
IV	Community Life in Far Away Lands	Community Life in Other Lands
V	Geography: The United States and Canada History: American Ex- ploration and Settle- ment	Life in the United States
VI	Geography: Europe History: European Be- ginnings of American Civilization	Our American Neighbors
VII	Geography: Latin Amer- ica, Africa, Australia, Asia; Colorado History: The Colonies Become a Nation; Colorado	Life on Other Continents
VIII	Geography: United States and Its World Rela- tionships; Colorado in World Affairs History: United States Becomes a World Power Civics: Nation, State and Community	Colorado and The Develop- ment of the United States into a Great Nation

A study of this table shows but little change in grades one through four. In grade five the only change is that Canada is moved up into the sixth grade. The entire year in grade six is devoted to "Our American Neighbors" with Europe moved to grade seven and included with "Life on Other Continents." The first half of United States history and Colorado are now found in grade eight, instead of grade seven, under "Colorado and The Development of the United States into a Great Nation."

The question arises, "How can the change from the 1936 to the 1942 Course best be made?" In a school which has been following the 1936 Course and wishes to begin using the 1942 Course in September of 1942, the following situation will exist.

1. The sixth grade will have studied Canada in grade five. All the rest of the sixth grade will be new. Since there is so little duplication, the sixth grade might well follow the 1942 Course.
2. Grade seven will already have studied Europe, but the rest of the continents will be new material. If grade seven follows exactly the 1942 Course, Latin America will be left out. Therefore, it is suggested that, in grade seven, Latin America be substituted for Europe, and that the remainder of the program in the 1942 Course be carried out.
3. The children in the eighth grade will have had Colorado and the first half of United States history. The suggestion here is that grade eight follow the 1942 Course, reviewing Colorado and the first half of United States history and completing United States history, with special emphasis on the geographical and historical aspects of the United States in relation to the rest of the world. Those parts of the units in the 1942 Course dealing with the development of the government of the United States may also be stressed.

If the plan suggested above is carried through, the transition from the 1936 to the 1942 Course can be made with a minimum of confusion. There will be a duplication of Canada in grade six, substitution of Latin America for Europe in grade seven, and duplication of the first half of the history of the United States and Colorado in grade eight.

The use of present text books with the New Course may present problems. Some fifth grade geographies include Latin America as well as the United States. In following the New Course, the part of such books dealing with "Our American Neighbors" would be used in sixth grade. Likewise, sixth grade texts dealing with Europe would be used in the seventh grade. There is no reason for concern about using fifth grade texts in the sixth grade, and sixth grade texts in the seventh grade. Most social studies texts are too difficult for the grade for which they were written, therefore moving them up would in many cases be an advantage. Many problems relative to adapting texts to the New Course may arise, and will have to be solved by local groups. The State Department of Education will be very glad to assist superintendents, principals and teachers in meeting these and other problems. After 1942-43 no further adjustments will be necessary.

Not all schools have followed the 1936 Course, therefore courses of study vary among counties and schools. If, in these situations, it is desired to change to the 1942 State Course, committees of teachers or school faculties may work out plans for the transition.

Combining Grades and Alternating Years in Small Schools

One of the big problems in schools having more than one grade with one teacher is that of the crowded daily schedule. The fusion of history, geography and civics into one course helps materially in reducing the number of classes. Combining two grades into one group and rotating the social studies course by years is a further aid in improving this situation. Furthermore, grades in small schools often contain too few children to make a good discussion or activity group. Combining two grades may result in a much better social and learning situation. It is, therefore, recommended that, in most cases, schools having two or more grades with one teacher use the following plan :

Grades I and II	1942-43	teach Grade II	units
	1943-44	teach Grade I	units
Grades III and IV	1942-43	teach Grade IV	units
	1943-44	teach Grade III	units
Grades V and VI	1942-43	teach Grade VI	units
	1943-44	teach Grade V	units
Grades VII and VIII	1942-43	teach Grade VIII	units
	1943-44	teach Grade VII	units

If all schools having more than one grade with one teacher follow this suggestion, children moving from one small school to another, within the state, will have had the same course in social studies.

Where grades are combined and the course rotated, the teacher will need to guide the work of the more immature children into the simpler aspects and activities of the units when the higher grade course is being used. When the lower grade course is used, more mature children should be challenged by more complex activities. For example, in 1942-43, combined grades one and two will follow, according to this plan, the course for grade two, *Living in the Local Community*. The first grade children will not be able to read widely about the units until near the end of the year, but they can participate on their level in discussion and activities. In 1943-44, when the first grade course is being taught, most second grade children may be expected to read more difficult books, work on more advanced problems, and contribute to active work on a higher level than the first grade children.

Even among children in one grade, we find a wide range in mental, emotional and social maturity, as well as in academic achievement. To combine two grades may, in many cases, add but little to the diversity which existed in either of the two grade groups alone. In any group, effective teaching calls for adapting the work to the abilities, interests and needs of individual children and evaluating results in terms of individual growth.

SPECIAL HELPS IN TEACHING SOCIAL STUDIES

Taking Care of Individual Differences

Inasmuch as the children within any group vary considerably in the ability to participate in group work, to grasp social studies concepts, and to read social studies materials, it is essential that the program for any class be adapted to these differences. Children of lesser reading ability should be given easier materials and those of above-average ability the more difficult materials to read. It is not necessary that all read the same thing. All may study different aspects of the same topic and then share the outcomes of their study with one another. Similarly in expressional work, some may be able to express themselves best through writing, some through painting, some through modeling with

clay, and some through singing. Uniformity of expression is not possible or to be desired.

Management of Group Activities

One method of handling group work in the social studies is to encourage the pupils to form interest groups, through selecting the major problem or topic of the unit they would rather study. Then, as members of these groups, they will collect and study material bearing on the problem and later share this with other groups through expressional activities, such as group reports, informal discussion, or dramatic interpretation. Pupils should keep a record of their reading and this should be checked in some manner by the teacher, through group reports, conferences, and tests.

Another plan of procedure is to encourage each child to study all of the problems and topics of a unit, reading material within his grasp. Then he participates in group responsibilities, such as taking care of reading and art materials, collecting maps, making arrangements for excursions, or being in charge of the bulletin board.

With the above plan, it is a good idea to keep close track of each child's reading activities. References (with pages given) on each problem or topic of the unit might be posted on separate sheets where children could refer to them before reading. Pupils should help the teacher in locating these references and making the lists. On another chart, made on squared paper, the children's names might be written down the side and the problem topics across the top, leaving about four or five spaces for each topic. As a child reads one reference on a topic a check is placed after his name in the appropriate column. After he has read three or four references on a topic, some check should be made of his reading. This may take the form of a written story based on his reading, an interview with the teacher, an informal sharing with his group, or a written test on the topic. If he has succeeded in learning a good deal about the topic, some special mark should be placed after the check marks to show that he has completed the study of that topic.

With either of the above plans for group work, it is important that the teacher call the entire class together from time to time for sharing the results of study, for taking stock, and for making plans for renewed efforts toward the progress of the unit.

Management of the Activity Period

An activity period in the social studies is a time when individual pupils and groups of pupils work on their special interests. Some might be constructing something of wood, some modeling with clay, some writing a letter, some sewing, some painting, and some reading, during the one activity period. During such a period children should be allowed to talk to one another about their group enterprises, if they are quiet enough not to bother others.

Careful management is most important. At the beginning of the period a few minutes should be given over to planning for the period. Then the various children and groups secure their materials and go to work. The teacher acts as guide and gives assistance where needed. At the end of the period, tools and materials are put in their places, work centers are put in order, children return to their regular seats and a few minutes are given over to sharing, evaluating, and planning. Pupils display what they have accomplished, plans are made for the next activity period, materials are requested, and the success of the period is evaluated. This is done through informal discussion of how much was accomplished, how well the work centers were put in order, whether the groups interfered with others in any way, and how quickly pupils returned to their seats.

Method of Developing Social Studies Concepts

Throughout the social studies we should emphasize first-hand experiences first and vicarious experiences second; though the latter are very important and should have their rightful place in the curriculum. When studying the community, an excursion into the community itself is a more effective learning experience than reading about the community from books. Experiences in social living are most important, if we would develop social beings as a result of these studies.

We learn democratic ways of living through practice. It is impossible to teach democracy where there is no democracy. Through provision for pupil participation in the planning, executing, and evaluating of our social studies program, we give them opportunity to experience the responsibilities and privileges that go with living in a democracy, to gain a better understanding of what democracy really means in terms of living.

In developing social studies understandings, it is best to begin with the present, with which the child has some acquaintance, and then go to the past for an understanding of how things came to be. This means that the study of a region or country need not be developed throughout in chronological order. The study of historical periods or events in chronological order should not be attempted before the fifth grade, since younger children are not usually able to understand such concepts of time. When developing chronological sequence, the time line is recommended as a device for showing which events came close together and which were very remote from each other. The line may be drawn horizontally or vertically and dates and events placed on it in proper proportion.

Collecting Materials and Locating References

Materials for use with the social studies units suggested may be found in various types of publications. Social studies textbooks, geographies, histories, and the newer type of text which combines geography and history are all excellent references. Much social studies content is found in readers, especially in those for lower grades, where the family, school, pets, neighbors, town and country life, etc. form the center of interest. Stories and poems should be included with most units. Texts may be used, but much supplementary or reference reading should be added. Many teachers prefer to develop room libraries which include one or a few of several different volumes rather than having them all alike. This gives wider information and more than one point of view.

Quantities of free and inexpensive materials for social studies are now available, if one knows where to secure them. Many five and ten cent books are now available from local stores, and several publishers have excellent series at prices of from twenty to thirty cents a book.

Free materials can be secured from such government agencies as the Soil Conservation Service and the Forestry Service of the United States Department of Agriculture. Such materials are listed in the supplementary bibliography for the social studies units, prepared and distributed by the State Library.

Preparatory to starting a unit of study, both teacher and pupils should make a thorough canvas of sources of materials:

books and magazines in the classroom, school library, city or town library, county library, state library, local stores, museums, homes, and other community sources. Then letters should be written for free and inexpensive materials. These may include booklets, films, posters, maps, charts, and exhibits. Increasing attention should be given to the arts in social studies; hence, materials should include music books, recordings, pictures, textiles, and other art objects.

The above types of materials should be made available in the classroom during the unit and returned to their rightful places as the unit closes. Never leave a room cluttered with reading materials and activity projects of one unit after a new unit has been started. As the materials are collected, pupils and teacher may list them with page references for various problems and topics of the unit. Then pupils may refer to the lists as they carry on their study.

Use of Community Resources

More and more the curriculum of the elementary school is concerning itself with the child's immediate environment, interests, and problems of living. The home, school, and community are the world in which he lives. Learning experiences in these areas are more meaningful to him and best meet his concerns and interests.

Pupils should not consider the community as merely something to study, but also a place in which to live and a place in which they should make a contribution and accept responsibilities.

In studying the community, excursions, interviewing people, reporting results of study, photographing and drawing local people and buildings, and other direct learning experiences are important. Projects for improving the health, safety, beauty, or social life of a community are excellent means of learning ways of community living through cooperative group effort. Community resources of all types should be studied, including human, natural, historical, social, industrial, recreational, and cultural. Better adjustment of pupils to their environment should result from these community studies and better school and community relations should follow.

Map, Picture, Graph, and Chart Study

Map study and place geography should not be neglected with our present emphasis on human values. As the world becomes increasingly interrelated through modern means of transportation and communication, it is important that citizens, readers of newspapers, and listeners to radio, have a good idea of the location of important countries, cities, mountains, rivers, canals, and seas. It is well to have a map on the wall with much use of it during the study. Children should be encouraged to study the maps in their text and reference books to see how much they can learn from them.

In beginning the study of a new area or country, it is probably best to begin with pictures, then maps, and then reading from the context. This will give greater meaning to the printed page. Children need considerable guidance in gaining information from pictures. They should be encouraged to learn about a country's climate, surface features, people, customs, and ways of earning a living, from the study of pictures in books and on bulletin boards. Guidance is also needed in gaining information from graphs and charts, for these sources of facts often mean little to the child until he is helped to interpret their meaning.

Materials for the Suggested Units

Bibliographies, published by the Colorado State Library, for use in teaching and studying the units of this social studies course may be obtained from your County Superintendent of Schools.

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PHYSICAL EDUCATION IN THE ELEMENTARY SCHOOL

WHY PHYSICAL EDUCATION SHOULD BE TAUGHT

Objectives of the Physical Education Program

Physical education shares with all other phases of the school curriculum in bringing about the realization of the major objectives of education. There are certain areas in which physical education has definite responsibilities in contributing to wholesome child growth. These responsibilities are:

1. To provide opportunities for vigorous physical, mental, and emotional growth through a variety of large motor activities.
2. To provide opportunities for the development and appreciation of the many skills which function in normal physical activities.
3. To provide opportunities for socialization through participation under guidance in many group play activities.
4. To provide opportunities for corrective work, where necessary, to help in overcoming physical defects and disabilities.

The outcomes of the program in physical education depend upon the careful planning and understanding guidance of the teacher. The responsibility is his to see that these opportunities are provided and that each child makes the best possible use of them.

Free Play and Instructional Periods

It is true that elementary school pupils need some time for free play. The daily recess and noon periods provide opportunities for free choice group games and play on outdoor apparatus. These periods should be given thoughtful and sympathetic supervision, but the choice of play activities and companions should usually be a matter of the child's preference, not teacher dictation.

However, neither of these periods satisfies the need for a daily physical education instructional period for elementary



Outdoor games play an important part in the physical education program

school pupils. In addition to the social values inherent in group recreational activities such as opportunities for developing courage, generosity, thoughtfulness, and fairness, muscular coordinations that respond readily to guidance at these ages should be developed. Fundamentals of rhythmic movement and of throwing and catching skills can be established which result in good motor habits upon which adolescent and adult performance can reliably depend. Good instruction in physical education emphasizes the development of efficient motor habits.

The Schedule

For children of all grades, daily physical education is recommended. This instructional period is most effective when placed in a mid-morning or mid-afternoon hour. An outdoor recess should be scheduled for neuro-muscular release in the other half of the day.

A twenty-minute period for the instructional work is recommended for the primary grades, and from thirty to forty-five minutes daily for older children.

When possible, it may be advisable to separate the sexes for the instructional period for children above the fourth grade. At about that age game interests begin to vary for boys and girls and mass skills develop unevenly. However, careful guidance can maintain a congenial and cooperative atmosphere with both boys and girls of the upper grades in the same class, so an administrator's inability to schedule separate classes need not restrict the physical education program.

Rural teachers may need to include pupils of several grades in one instructional period, but with careful organization this procedure can be well arranged. The choice of activities for such a variation of ages must consider appropriate skills for the different age levels, and also opportunities for help by the older children. A list of suggested activities for such groups appears in this section under "Suggested Adaptations of This Program."

The Program

Play interests change noticeably during the elementary school years. First grade children are usually self-centered individuals, and the development of group consciousness in play organization is a gradual one.

Rhythmic, creative, and large muscle activities hold most appeal for children of primary grades. Hand and eye coordinations may be developed by a slowly progressive program of ball-handling games, in which the fundamentals of catching and throwing need careful attention.

By the fourth grade, children usually are attracted by the idea of competition and begin to develop the idea of team play. These interests remain keen throughout the remaining elementary years. Competition in stunts and self-testing activities is also satisfying.

Each grade should have a varied program of activities in keeping with the neuro-muscular maturity of the group. Suggested activities will be found in "The Program in Physical Education by Grades" in this section.

HOW PHYSICAL EDUCATION MIGHT FUNCTION IN OTHER ACTIVITIES

On any age level, rich opportunities exist for the correlation of physical education activities with classroom units. Authentic folk dances fit nicely into many social studies activities and singing games may correlate with the music program.

School plays and operettas provide a natural setting for games, stunts, tumbling acts, dances, etc., which have been learned in the physical education period. In some schools where creative work is emphasized the children develop their own dances to fit the play which is being given.

Health and physical education are closely related. In this course, health information is included in the "Program in Science and Health". This does not mean that it is not to be taught anywhere else. *All teachers should take advantage of every opportunity to increase health learning and strengthen health attitudes and habits.* The physical education teacher is in an excellent position to make suggestions for the improvement of health, since the children are eager to participate successfully in the activities of the physical education program and consequently are ready to accept suggestions which will help to make them well and strong. It is definitely recommended, however, that the physical education period be used for *physical education* and not for *lessons* in health.

SUGGESTED PHYSICAL EDUCATION PROGRAM BY GRADES

GRADE ONE

Desirable Outcomes

1. Growth in ability to walk lightly, run lightly, and skip lightly with music
2. Growth in ability to dramatize in play
3. Growth in ability to run without falling and to dodge other runners
4. Growth in ability to play in a group
5. Growth in willingness to give other children their turns

Suggested Activities¹

Story Plays

Cowboys	(10)	Making and flying a kite	(6)
A day in the country	(10)	Firemen	(10)
Cutting the grass	(10)	Play in the snow	(10)
How animals get ready for winter	(10)		

Rhythms

Creative

Pantomime

High stepping horses	(9)	Rolling hoops	(11)
Giants	(9)	Rocking horse	(11)
Elephants	(7)	Here come the bold riders	(11)
Fairies	(7)		

Free Expression

Walking	(9 and 11)	Fast-slow game	(11)
Running	(9 and 11)	Echo game	(11)
Skipping	(9 and 11)		

Singing Games

Here We Go Up	(11)	Muffin Man	(9)
Bluebird	(7 and 9)	Sailboat	(9)
Did You Ever See a Lassie	(9)	How D'Ye Do, My Partner	(10)
I'm Very, Very Tall	(9)	Round Went the	
Little Ducks	(9)	Gallant Ship	(2)

¹Numbers following activities indicate books in the "Bibliography for Teachers" in which descriptions of games are found.

Games

Brownies and fairies	(8 and 10)	Squirrels in trees	(8 and 10)
Crossing the brook	(8 and 10)	Bird catcher	(8 and 10)
Magic carpet	(8 and 10)	Do this, do that	(8)
Follow the leader	(8)	Tag (and variations)	(8)
Run, rabbit, run	(10)	Charlie over the water	(8)

Mimetics

Rabbits, ducks, galloping horses, butterflies, growing seeds, and frogs

Illustrative Game**Squirrels in Trees**

Two-thirds of the players stand in couples with hands on each other's shoulders, forming hollow trees. The trees are scattered about in informal formation, with considerable space between them. Place inside each tree one of the remaining players, representing a squirrel. There should be in addition, an odd squirrel who is without a tree. The teacher or leader claps his hands, or blows a whistle, and all of the squirrels must run for another tree and may not return to the tree they have just left. The odd squirrel tries to secure a tree. The one who is left without a tree becomes the odd squirrel.

GRADE TWO**Desirable Outcomes**

1. Growth in ability to move with a partner to music
2. Growth in readiness to accept group decisions
3. Growth in catching and throwing skills
4. Growth in appreciation of fair play

Suggested Activities**Story Plays**

Indians	(10)	Making a garden	(10)
In the barn	(10)	The wind	(10)
Pilgrims	(10)	Lumbering	(10)
Building Eskimo houses	(10)	Parade	(10)

Rhythms**Creative**

Stepping stones	(11)	See saw	(11)
Leap frog	(11)	Sliding	(9)
Bouncing the ball	(11)	Galloping	(9)

Singing Games

Thread Follows	Jolly Is the Miller (9 and 10)
the Needle (9)	A Hunting We Will
Nuts in May (9 and 10)	Go (10)
Old Roger (9)	Oats, Peas, Beans (10)
Chimes of Dun-	Yankee Doodle (6)
kirk (9 and 10)	

Games

Hound and rabbit (8 and 10)	Midnight (8)
Spider and flies (10)	Jump the shot (8)
Circle stride ball (8)	Rope skipping (8)
Hot ball (8)	Jacob and Rachel (8)
Run for your supper (8)	Squirrel and nut (10)
Partner tag (8)	

Mimetics

Bell ringing (10)	Elevator (10)
Climbing ladders (10)	

Illustrative Game

Squirrel and Nut

An object may be used to represent a nut. The children are at their seats, heads lowered on one arm, eyes closed as if asleep, one hand held open to receive the nut from the squirrel.

One player, who represents a squirrel and who carries a nut in his or her hand, runs quickly up and down the aisles on tiptoe and drops the nut into one of the open hands. The chase now begins with all awake to see the fun, for as soon as the squirrel drops the nut, he tries to reach his nest (his own seat) before the player who received the nut can tag him. If caught, the player who is the squirrel becomes the squirrel again. If the nest is safely reached, the second player now becomes the squirrel and the game proceeds.

GRADE THREE

Desirable Outcomes

1. Growth in ability to give directions
2. Growth in ability to make plans with group
3. Growth in readiness to accept group decisions
4. Growth in ability to run faster
5. Growth in catching and throwing skills
6. Growth in appreciation of fair play

Suggested Activities

Rhythms

Creative

Phrasing	(11)	Polka	(11)
Whirling	(9)		

Singing Games

Pease Porridge Hot	(10)	I See You	(3)
Carrousel	(9 and 10)	Three Dukes	(4)
Nixie Polka	(9 and 10)	Hansel and Gretel	(9)
Taffy Was a Welshman	(10)		

Stunts

Human rocker	(10)	Backward roll	(10)
Crab walk	(10)	Bear dance	(10)
Step hop	(10)	Cartwheel	(10)
Frog hand stand	(10)	Chinese get-up	(10)
Forward roll	(10)		

Games

Bean bag circle toss	(10)	Marbles	(8)
Fire engine	(10)	End dodge ball	(8)
Floor tag	(10)	Freight train tag	(8)
Ocean is stormy	(10)	Beater goes 'round	(8)
Boundary ball	(10)	Back to back	(10)
Dodge ball	(10)	Bear in the pit	(2)
Circle club bowls	(8)	Hopscotch	(8)

Illustrative Game

The Ocean Is Stormy

Arrange all but two players in pairs in scattered positions about the playing area. Have each pair draw a circle three feet in diameter about its position. Have each pair join hands and secretly choose the name of some fish.

Appoint the extra players "whales" and place them in the center of the playing area holding hands. At a signal the "whales" continuing to hold hands, walk about the playing area calling the names of fish. Each pair that has chosen the name of the fish that is called, falls in behind the "whales" and follows after them. When the "whales" can think of no more fish, they

call, "The ocean is stormy" and all run for the empty circles. The pair left without a circle become the "whales" for the next game.

GRADE FOUR

Desirable Outcomes

1. Growth in ability to organize teams
2. Growth in readiness to accept leader's directions
3. Growth in ability to give directions
4. Growth in ability to work for a team
5. Growth in ability to run faster
6. Growth in catching, throwing, kicking, and batting skills
7. Development of skill in officiating group games
8. Growth in ability to reason in group discussions
9. Increasing demand for fair play

Suggested Activities

Rhythms

Waltz	(9)	Waltz run	(9)
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Studies in Musical Expression

Crescendo	(11)	Fable of the Ant and	
Arkansas Traveler	(11)	Grasshopper	(11)
Tantali	(11)	Master Gepelte Making	
Fable of the Kid and Wolf	(11)	Pinocchio	(11)

Folk Dances

Broom Dance	(10)	Jump Jim Crow	(10)
Children's Polka	(10)	Pop Goes the	
Comin' Thru the		Weasel	(9 and 10)
Rye	(10)	Gustaf's Skoal	(9)
Dutch Couple		Norwegian Mountain	
Dance	(9 and 10)	March	(3)

Stunts

Frog hop	(10)	Back spring	(10)
Stooping stretch	(10)	Leap frog and forward roll	(10)
Knee dip	(10)	Centipede	(10)
Double forward roll	(10)	Skin the snake	(8)
Head stand	(10)		

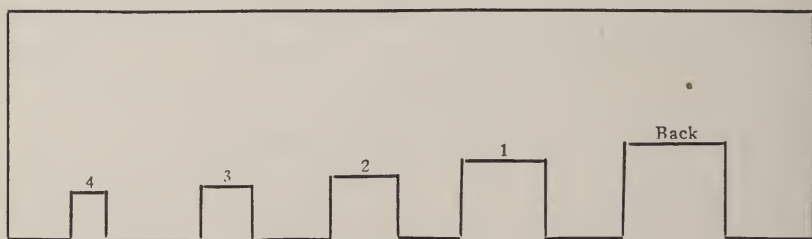
Games

End ball	(8 and 10)	Prisoner's base	(8)
Corner ball	(8)	Black and white	(2)
Pin soccer	(10)	Duck on rock	(8)
Soccer dodge ball	(10)	Corner dodge ball	(8)
Carry and fetch relay	(10)	Corner spry	(10)
Soccer relay	(10)	Pom Pom pullaway	(8 and 10)

Illustrative Game**Marble Count**

Any size board can be cut for use—however, one that is two feet long, four to six inches in height, with enough width to enable it to stand alone is best. Any number of gates may be cut. The last hole is just large enough for a large size marble to pass through.

The pupils play in couples and any number of boards may be used. Marbles are divided evenly between the players. They take turns shooting at the holes from a distance of three to five feet. Any time a marble passes through “back” that player retains his shooter. Should his marble succeed in going through “1” or “3”, etc., he again keeps his shooter but his opponent must forfeit the number of marbles the hole is numbered. Any marble not passing through a hole belongs to his opponent.

Marble Count**GRADE FIVE****Desirable Outcomes**

1. Growth in ability to take turns in leading and following
2. Growth in readiness to praise another for good work
3. Improvement of skills in dodging, kicking, catching, throwing, and batting
4. Growth in ability to officiate group games



Fifth grade boys and girls enjoy the folk dances of the pioneers

5. Growth in ability to cooperate with other members of a team
6. Enlargement of knowledge of children of other countries by learning their traditional dances

Suggested Activities

Rhythms

Folk Dances

Brummel Schot-		Jinny Pluck Pears	(6)
tische	(11)	Kaca	(9)
Buck and Wing	(9)	O Susanna	(6)
Csebogar	(9 and 10)	Sword Dance	(11)
Highland Schot-		Virginia Reel	(9 and 10)
tische	(9 and 10)		

Marching Drills

Stunts

Cartwheel	(10)	Jump the stick	(10)
Hand jump	(10)	Push up	(6)
Horizontal balance	(10)	Push from the wall	(6)
Indian wrestle	(10)	Turk stand	(10)

Games

Bases on ball	(8)	Long base	(6 and 10)
Bombardment	(8 and 10)	Newcomb	(8)
Captain ball	(8 and 10)	Progressive dodge	
Circle relay	(8 and 10)	ball	(8 and 10)
Circle soccer	(10)	Work-up	(10)
Club snatch	(8 and 10)	Scrub	(8)
German bat ball	(6)	Dashes (25 yards)	

Illustrative Game

Bear in the Pit

Ten to thirty children may play this game. A bear pit is formed by the players joining hands in a circle with one in the center as the bear. The bear tries to get out by breaking apart the bars (clasped hands), or by going over or under these barriers. Should he escape all of the other players give chase, the one catching him becoming the bear.

GRADE SIX

Desirable Outcomes

1. Growth in ability to plan team plays
2. Growth in ability to use best personal skills while a member of a team
3. Growth in readiness to praise another for good work
4. Growth in ability to volley a ball
5. Growth in ability to manipulate the quoit used in deck tennis
6. Development of personal skills in throwing, catching, kicking, and batting a ball
7. Growth in ability to lead a squad

Suggested Activities

Rhythms

Folk Dances

Ace of Diamonds	(10)	Kerry Dance	(9)
Captain Jinks	(9 and 10)	Little Man in a Fix	(6)
Janko	(9)	School Days	(6)
		Tinker's Dance	(9)

Social Dancing

Dance walk	(1)	Walk and side steps	(1)
Box waltz	(1)	Schottische couple dance	(10)
Waltz	(1)		

Stunts

Dead man	(6)	Seal slap	(6)
Elephant walk	(10)	Sitting balance	(10)
Knee jump	(6)	Triple roll	(10)
Russian dance	(6)		

Games

Barley break	(8 and 10)	Soccer	(8)
Bound ball	(8)	Volleyball	(8)
Dare base	(10)	Playground ball	(8)
Hit pin ball	(10)	Deck tennis	(8)
Liberty bat ball	(8)	Dashes (30 yards)	
Schlag ball	(8)	Shuttle relays	(8)
Slipper slap	(8)	Shuffleboard	(8)
Two old cat	(10)		

Illustrative Game**Kick Ball**

Played like hand baseball with sportball or soccerball. Pitcher rolls ball to batter who kicks it with his foot. Rules of playground ball apply, with the following exceptions:

1. Kicker stands directly behind home plate.
2. Pitched ball is considered good and may be called a strike if it passes directly over home plate, not higher than a kicker's knees.
3. A pitched ball hitting the kicker above the knees is a dead ball and is counted as a ball unless the kicker makes no attempt to avoid it, in which case it is called a strike. Base runners may not advance on the play.
4. Base runners may be put out by either hitting them with a thrown ball (boys only) or throwing the ball in front of them.

GRADES SEVEN AND EIGHT**Desirable Outcomes**

1. Improvement of all game skills
2. Ability to share (with teacher) the responsibility of helping plan the program
3. Growth in observation of companions' game skills, and ability to make suggestions
4. Ability to take responsibilities of scoring and officiating
5. Ability to follow and to give directions well

Rhythms**Suggested Activities****Folk Dances**

Rye Waltz	(10)	Hungarian Czardus	(9)
Skaters' Waltz		The Lancers	(9)
Bean Setting	(9)	Birdie in the Center	(9)
Highland Fling	(9)	The Girl I Left Be-	
Donegal Coun-		hind Me	(9 and 10)
try Dance	(9)		

Social Dancing

Two step	(1)	Grapevine	(1)
Waltz hesitation	(1)		

Clog Dancing

University High Clog	(9)	Dancing Clowns	(5)
Newsboy Clog	(5)	Boxing Clog	(5)
Topsy	(5)	Sambo	(5)
Arkansas Travelers	(5)	Jack and Jill	(5)

Stunts

Hand stand	(10)	Hand spring	(10)
Shoulder stand	(10)	Touch toe jump	(10)
Camel walk	(10)		

Games

Nine-court basketball	(8)	Baseball throw	
Basketball drills	(10)	Basketball throw	
Basketball		Table tennis (ping-pong)	(2)
Pursuit relays		Speedball	(10)
Dashes (50 yd. and 100 yd.)	(8)	Playground ball	(8)
Running hop, step, and jump	(8)	Badminton	(2)
		Touch football (for boys)	

Illustrative Games

Punch Fist Ball

Ball and diamond are same as for hand baseball (a basketball or volleyball being used), except that there is no pitcher's base and home plate is three feet wide. The batter stands on home base, and the catcher of the fielding team, stands about six feet to one side, and tosses the ball to the batter. The batter hits the ball into the field with his fist and runs bases as in baseball. To retire the runner, the fielders throw the ball to the catcher instead of to the base to which the runner is advancing. The batter or runner is out under the following conditions:

1. If a fly ball (fair or foul) hit by the batter is caught.
2. If the catcher holding the ball touches home base before runner reaches first base.
3. If the runner is off base and the catcher holding the ball touches home base and calls his name.

In other respects the rules of playground ball apply.

Touch Football (for boys)

Played according to football rules except that there is no tackling. Touching the ball carrier between the shoulder blades

constitutes a "tackle." Touchdown scores six points; safety two. There is no play for point after touchdown as in other football, nor may points be scored from a field goal.

EVALUATING THE PUPIL'S WORK

Evaluation should be in terms of the growth of the pupil in those abilities, skills, and attitudes which have been set up as "desirable outcomes." Much of the evaluation will be based on observation by the teacher of the pupil's progress individually and in the group. Pupils should participate in evaluation in that they should be aware of the goals toward which they are working and the progress which they are making toward realizing them. It is often helpful to choose, in conference with the pupil, one major thing at a time on which to work, and follow this by frequent checking with the pupil to see what progress he is making.

Growth in certain skills, such as the ability to catch and throw a ball, run, and jump can be measured much more objectively than attitudes of good sportsmanship, group spirit, and cooperation. Nevertheless these less tangible outcomes are of even more importance than the more objective skills and should be kept foremost in the teacher's mind.

Attention should be given to the growth in desirable attitudes of the group as a whole. Often group behavior is different from that of the children in the group reacting as individuals. Under the right kind of guidance, concern for the good of the group and the realization that individual and group welfare are closely interrelated, can be developed.

SUGGESTED ADAPTATIONS OF THIS PROGRAM FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

In a school with a fairly large enrollment where several grades are taught by one teacher, the children may be divided into two or more play groups according to age. Pupil helpers may be used to lead these groups and teach new games. The teacher can divide his time among the groups giving help and guidance where it is most needed. Pupil helpers should be given special instruction by the teacher so that they may guide the group activities in such ways as to insure the maximum growth of the individuals in the group and the group as a whole.

There are many games in which children of varying ages may participate. Many schools are too small for grouping to be practical, therefore, a part of the program should involve all children playing the same games together. This practice is desirable for a part of the time even in larger schools since there are social values to be gained through play activities involving different age children. Listed below are some of the games which are adapted to heterogeneous age groups. Most of these games are described in reference Number 4 in the "Bibliography for Teachers."

Games

Ante Over	Jolly Is the Miller
Baseball Target Throw	Jump the Shot
Baseball Work-up	Jumping Rope
Beater Goes 'Round	Last Couple Out
Black and White	Long Base
Bombardment	Magic Carpet
Broom Dance	Marbles
Captain Jinks	Mother Carey's Chickens
Carrousel	Ocean Is Stormy, The
Circle Stride Ball	One Old Cat
Club Snatch	Partner Tag
Dodge Ball	Pease Porridge Hot
Duck on a Rock	P'op Goes the Weasel
End Ball	Railroad Train
Fire Engine	Red Light
Flying Dutchman	Statues
Freight Train Tag	Two Deep
Hill Dill Come Over the Hill	Wood Tag
Indian Club Guard	

Relays

Aisle Pass	Eraser
Arch Ball	Farmer and Crow
Automobile	Kick Bag
Blackboard	Over and Under
Bull Frog	Sit and Stand
Carry and Fetch	Skipping

SPECIAL HELPS IN TEACHING PHYSICAL EDUCATION

Equipment

Certain areas for play should be provided in each school layout. Carefully planned outdoor playgrounds simplify supervision. A level surface, separate territories for primary children and the older pupils, simple and safe apparatus, and an understood code of behavior are important characteristics of a good playground.

One valuable piece of apparatus for the younger children is the jungle gym. Stationary horizontal bars in two, three, and four foot heights are also recommended. Usually, moving pieces of apparatus such as swings, Maypoles, ocean waves, etc., are discouraged. If swings are included, be sure they are placed in a corner or along one side of the playground. No running or playing behind swings should be allowed. Playground equipment should be inspected frequently to insure safety.

Base marks and boundaries needed in free play and instructional periods may be marked out on the playground. Dehydrated lime is most commonly used for these markings.

Indoor play areas are also needed. A light, well-ventilated room, free from furnishings is very useful. Floor markings for base lines and boundaries can be painted. If mats for tumbling are available, they should hang flat against the wall when not in use. The piano, a valuable accessory, should also be against a wall. An equipment cupboard adjacent to this playroom may contain the balls, bean bags, etc., used in active play, as well as the equipment for Chinese checkers, crokinole, puzzles, etc., used as quiet games during free play periods.

Playground equipment is expensive, therefore, it is wise to order from reputable sporting goods firms where guaranteed equipment may be obtained. Catalogs for sports equipment will be furnished by these firms.

The following list gives an idea of what items of equipment may be most useful: soccer balls (used for all throwing games with primary children, for dodge ball, and for all kicking games), soft balls, volley balls, basketballs, bats, bean bags, deck tennis rings, and a volley ball net. Additional items to enrich the supply would be Indian clubs, shuffleboard equipment, ping-pong equipment, canvas base bags, tumbling mats, unbleached muslin

covers (washable) for the tumbling mats, jumping ropes of varying length, checkers, and various types of quiet games.

Homemade Equipment

There are many games for which equipment can be made by the teacher and pupils. Sometimes the help of the janitor or someone in the community may need to be sought. School boards are often more willing to spend money for materials for homemade equipment than for commercial equipment, since the latter is usually much more expensive. Building one's own play equipment can be an excellent school project, resulting in growth of the children in manual skills, ability to work with others, a feeling of service to others, and a greater appreciation of the equipment which is furnished them.

Descriptions of how to build many types of play equipment will be found in several of the books listed in the "Bibliography for Teachers" at the end of this section. In addition to these the following references are recommended:

Gardner, Ella. *Handbook for Recreation Leaders*. U. S. Department of Labor, Children's Bureau Publication Number 231. Washington, D. C.: Superintendent of Documents, 1936. Price 15c.

Works Projects Administration. *Leisure Time Craft Suggestions*. Topeka, Kansas: Federal Works Agency, State Supervisor of Recreation, 1941.

Organization

One objective in physical education classes is to have pupils share responsibility and leadership. Squad arrangements are especially satisfactory, if the squad leaders are chosen by the class as a whole after discussion of desirable qualities for leaders. The leaders later meet to select the squad members, and this grouping is maintained for four weeks or more. No more than eight or ten children should be on a squad.

Each squad reports at the beginning of the instructional period to its own area on the playground or in the play room, roll is taken, and preliminary practice on game techniques is directed by the student leader. Such a program implies extra teacher time in meeting previously with squad leaders so those pupils know what their responsibilities are, but pays richly in

social experience. Often the choice of activities actually included in the program is partially guided by the leaders' suggestions in these conferences.

Equipment helpers may be appointed from the class for specialized duties connected with the daily delivery and return of equipment. A child who is negligent in the performance of the job should be replaced.

Special costumes for children in physical education classes are not necessary, though in mixed classes, girls may ask to bring slacks or play suits on days when tumbling is scheduled. Tennis shoes, however, are almost a necessity for indoor use. Storage space in coat rooms should be arranged, and each shoe should be legibly marked with its owner's name. Heavy woolen gym socks may be used as a substitute for rubber soled tennis shoes.

Interscholastic competition is decidedly unwise for children of elementary school age. The heart is not yet fully enough developed to meet the intense physical and emotional strain connected with such a program. A desire for competitive games will be strong, but the teacher who provides ample tournament time in the physical education program can meet that desire.

Arranging play days (sometimes called sports days), which are really get acquainted and good will gestures, will encourage friendship rather than intense rivalry with visiting children. Team memberships for play days are heterogeneous—the "Giants," for instance, will be made up of some representatives of all schools present; the "Bears" likewise; etc. No one team represents one school or one grade. The winning team for the affair will be the one accumulating the highest total of points in the various games to which each team has moved during the program. Sometimes the program ends with a mass game of softball, volleyball, or deck tennis, with the older children as participants (still on mixed teams) and the younger ones as spectators.

Such a sports day program can be arranged for all grades in one school, for all schools in one town, or for neighboring towns. Children enjoy them.

Suggestions For Guiding Game Activities

An orderly group in the halls while passing to and from play periods does not necessarily have to be in military file formation. The aim is for the children to get from one place to another in

an orderly and natural manner. Contests for quietness between boys and girls, for instance, may be carried on day after day in a happy fashion.

Make your pre-class plans carefully; meet with squad leaders if you intend to use them as assistants.

Instructions for an activity may be given in the classroom if a blackboard diagram is desirable. Avoid keeping the eager group inside, however, if there are only review instructions to be given.

Select one definite location for the pupils to meet as soon as they reach the play area. Tell them in advance if they are to report to their squad location or to the class location. Definite line markings (boundary lines already established) are helpful.

Speak briefly, clearly and definitely. Speak only when you have the attention of everyone.

Avoid promiscuous use of a whistle. This device should be used only by the official in a group game. Hand signals may be established which forewarn the pupils of the nature of the pause. A firm handclap may ask for attention; one hand raised straight overhead may call students to you for a discussion of some item needing consideration during a game; and two hands directly overhead may mean dismissal.

Avoid continual choosing of sides for new teams. The teacher may choose the squads or teams, basing his choice on his knowledge of the children; or at random, having the children count off in one-two fashion, the ones forming one team and the twos the other. Student captains choose slowly and certain children will inevitably be the last ones selected no matter who is making the choice. To avoid personal humiliation and probable discontent with the games always associated in those children's minds with their humiliation, use other patterns for team division.

Commend good work. Give personal individual instruction in techniques whenever an instance suggests the need, even when a game is in progress. Give encouragement. Follow a "do this" policy rather than a "don't do that" plan.

Make frequent use of demonstrations when presenting a new technique. Pupils previously instructed may give the demonstration, or the teacher may do it. Be sure the class is in a

position to see clearly all the factors that are basic and in which training is to be given.

Suggestions for Teaching Rhythms

1. Dramatic and singing games belong in the primary grades.
2. Folk dances for the older children may be correlated with the social studies program.
3. The close affiliation between music and movement should be emphasized. Young pupils can be led to recognize changes in volume, in tempo, and in phrasing.
4. Piano accompaniment is most satisfactory, but good phonograph recordings are a substitute.
5. Know your music well.
6. Avoid instructing the children to take "sixteen steps to the right." Instead say, "Step to the right with the music, like this," and then demonstrate while humming the tune, or while the pianist or phonograph plays it.
7. When older boys begin to object that folk dances are sissy, select dances with a decided self-testing element, and do not insist on boy-girl partnerships.
8. Use tap and clog dances for the older pupils. Avoid the fine neuro-muscular demands of tap dancing for primary children, even though you think it "cute."
9. If your community permits and the older students request it, offer fundamental instruction in social dancing, emphasizing the close correlation of step pattern with measure pattern in the music. Most young people want to learn to dance and careful guidance pleases average parents.

Suggestions For Story Plays

A story play is a story read or told to which the children respond with appropriate actions. It is really a form of creative dramatics without the use of spoken words by the children.

1. Tell stories with which vigorous and whole-body movement can be associated.
2. Avoid a prolonged story. One with six or eight pauses for pupil illustration lasting about five minutes, is best.

3. Introduce the story with an announcement of the signal you will give that tells them their actions are to cease so they can hear the rest of the story. (Handclap, raised hand, or piano chord, for instance.)
4. Use a free formation, with boundaries carefully defined.
5. Select stories which tell about the seasons of the year, familiar activities, holidays, animals, or toys; which may be adapted from favorite child stories; or better yet, which may be entirely a creation from your own imagination.
6. Avoid repeating a story, unless begged to do so.
7. Allow original actions. Avoid dictating one interpretive movement for all. Ask pupils for their own ideas.

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¹The numbers following each of the suggested activities listed under the "Suggested Physical Education Program By Grades" are keyed to this bibliography by the numbers preceding each reference.

SCIENCE AND HEALTH IN THE ELEMENTARY SCHOOL

WHY SCIENCE AND HEALTH SHOULD BE TAUGHT

Science and health contribute to the education of boys and girls in helping them to adjust more effectively and completely to the world in which they live. The following objectives of science teaching in the elementary school if realized, will help children in making these adjustments.

1. To develop in children an appreciation of the natural and physical environment in which they live and the part which science plays in their lives
2. To develop in children such scientific attitudes as curiosity, willingness to change opinions on the basis of new evidence, a desire for truth, a concept of cause and effect relationships, and the desire to base conclusions on sufficient evidence
3. To develop in children desirable social attitudes in regard to conservation, health, safety, and sex
4. To help children develop the scientific method of problem solving
5. To develop skills and abilities which will aid in finding information when needed and in carrying out simple experiments which are necessary to the solution of problems
6. To widen children's interests and enrich their experiences
7. To help children acquire those science concepts which are necessary to the understanding of scientific principles

HOW SCIENCE AND HEALTH MIGHT FUNCTION IN OTHER ACTIVITIES

Science and health may very easily be integrated with the other subjects taught in the elementary school. For example, when a unit on the farm is being presented in the social studies class, the problem, "How do animals care for their young?" may

also be studied at the same time. Children may take a trip to the farm and observe how various animals on the farm care for their young.

When the social studies unit on the development of Colorado is being taught, the problem dealing with the geologic history of Colorado may be studied.

In the language arts children may write letters to various government agencies, etc., asking for information and bulletins on particular problems. The children may write experiments done in class, reports of field trips, "thank you" notes to people who have talked to the class in connection with various problems, and reports of interviews. Children should learn how to spell all new scientific words.

In arithmetic boys and girls may learn how to read graphs, tables, and charts. They may learn to make graphs, charts, and tables used to record results of observations made in science or of information needed to help solve problems.

In reading children must be taught how to read science material. The teacher must be very sure that *new* science words are made meaningful to children before they begin to read. Children should be taught the correct terms that are necessary for the understanding of science concepts. For example, children should use the term "chrysalis" when speaking of the pupa stage of a butterfly not the term "cocoon" which is a more common word to adults.

In art children may make drawings representing observations of the habits of animals, etc. Groups may make a "movie" as a culminating activity, showing concepts learned during the solving of a problem.

SUGGESTED SCIENCE AND HEALTH PROGRAM BY GRADES

Since the problem solving method of teaching is suggested, the program for teaching science and health in the elementary school has been organized around problems in the following areas: living things, health, safety, the physical environment, conservation, and consumer education.

These problems are to be used by the teacher as a guide in directing the work of the pupils. He must take into account the experiences, needs, and interests of the children whom he teaches. The teacher should adapt the problems to the community in which he works.

The program for each grade has been planned in such a way that new concepts may be learned each year until finally these concepts may be put together to make a science principle.

In the primary grades the problems have been formulated around the experiences children may have during the seasons of the year. In the intermediate grades and junior high school the problems need not be taught in the order listed. In some schools the children will be more interested in one problem than another and may spend more time on that problem than another group of children. However, it is suggested that a problem in each area of science be studied each year.

Health should be taught and stressed in all school activities whenever the opportunity arises. In this Science and Health section the informational health program is given. Wherever it has seemed desirable, health questions and problems have been included in the science units themselves. For example, the unit on sound takes up "how we hear and the care of the ears". In addition to the health material which is correlated with science, each grade includes one unit dealing specifically with health.

Not all of the health work which should be carried on in a school is suggested in this course. The teacher should take advantage of the opportunities which arise for teaching health in connection with what is happening in the home, community, and school. An epidemic of measles may result in an interest in communicable diseases, testing sight and hearing may lead to a study of how we see and hear and the care of the eyes and ears, and weighing and measuring children may be followed by a discussion of what foods keep us healthy and make us grow.

It is not necessary to have a hygiene or health period every day. While interest in a topic or unit is high, considerable time may be devoted to it over a period of several days or even weeks. This may be followed by periods in which the major emphasis is placed on science units involving little or no health. The teacher should, however, always be on the alert to take advantage of opportunities to develop health understandings, attitudes, appreciations, and habits; to apply health information which has been learned; and to get new information which may be needed in solving problems which have arisen.

The Division of Public Health and the State Department of Education have in preparation a bulletin entitled *Health Handbook for Teachers*. This bulletin will include pertinent health

information for teachers, suggested teaching procedures, and will list many sources of health teaching materials. It may be secured free, as soon as it is printed, through the office of the county superintendent of schools. Every teacher should have this extremely valuable teaching help.

GRADE ONE

Problem I

What Is Happening to Living Things in Autumn?

1. What is happening to insects in autumn?
2. What happens to birds in autumn?
3. What is happening to other animals in autumn?

Suggested Activities

1. A walk or field trip to observe animals storing food, caterpillars spinning cocoons and making chrysalids, trees losing leaves, fruits on plants, buds on branches.
2. Make charts showing what is happening to different animals in autumn.
3. Construct a birds' feeding shelf for use over winter to observe birds.
4. Make a winter home for a garter snake, frog, or desert horned toad.
5. Collect seeds and find out how seeds are carried by wind, water, birds, and animals.
6. Mount pictures of some bird and insect migrants. Write date upon which they were last observed.
7. Visit a cellar to observe foods that have been stored for use during the winter.
8. Arrange pictures on the bulletin board showing what is happening to living things in autumn.

Problem II

How Does the Sky Change?

1. What do we see in the sky during the day?
2. What do we see in the sky at night?
3. How does the moon look?
4. Where is the Big Dipper?

Suggested Activities

1. Paste star stickers on a large piece of black paper to represent the Big Dipper as it appears at time children are discussing it.
2. Make drawings, or use yellow construction paper pasted on black paper, to show how the moon looks at different times during a month.
3. Take an excursion to the school yard to observe various heavenly bodies in sky. Children should look at the sun only through a smoked glass or when a cloud is over it.
4. Through discussion compare things seen in the sky during the day with those at night.

Problem III

How Can We Find Out About Air?

1. Where do we find air?
2. Why do things need air to burn?
3. What happens when air moves?
4. How does water go into the air?

Suggested Activities

1. Show that fire needs air to burn. Place a glass jar over a lighted candle. In the children's language, the light will go out as soon as the fresh air is used. (Goes out because less oxygen is in the jar.)
2. Use same procedure as above but when the candle is almost out, pull up the jar. The candle will burn as well as ever, because of the fresh supply of air.
3. Boil water to show that heat makes water go into the air. Use a small amount so that it will boil quickly. Measure with a stick frequently to see that the water has gone into the air.
4. Fill a glass nearly full of water. Mark the water level. Let the glass of water stand in the window where the sunlight will reach it. Observe evaporation of water.
5. Wash blackboard. The water goes into the air.
6. Show that clothes dry because water goes into the air.
7. Tell children to fan themselves to show movement of air.

8. Have children tell experiences they have had on a windy day such as flying a kite, losing their hats, etc.
9. Drop a feather in the warm air over a radiator or stove. Watch the air currents carrying it upward.
10. Make paper pinwheels and have children run with them.
11. Put pans of the same size and containing the same amount of water in different places to show rate of evaporation. Put one pan outside in the sun; one outside in the shade; leave one in the room with the cover on; one without cover; and one in the room in a cool place.
12. Blow pieces of paper into the air to show how air moves materials.

Problem IV

How Does the Weather Change?

1. What kinds of weather do we have on different days?
2. What kinds of weather do we have at different times of the year?
3. Why do we have to dress for different kinds of weather?

Suggested Activities

1. Make a weather chart showing weather conditions for several weeks. Describe weather as windy or still, warm or cold, wet or dry, sunny or cloudy.
2. Collect pictures showing local weather conditions in summer, autumn, winter, and spring.
3. Discuss children's experiences in all kinds of weather.
4. Observe the red line on a thermometer; the red line is short when cold, long when warm.
5. Discuss different types of clothing for different kinds of weather. The children might like to dress dolls showing what kinds of clothing to wear for different kinds of weather.

Problem V

How Do We Keep Well?

1. Why should we take care of colds?
2. Why should we take care of our teeth?
3. Why should we have wholesome food to eat and drink?

4. How can we take care of our eyes and ears?
5. How can we be careful at home and in school?

Suggested Activities

1. Display pictures on the bulletin board showing wholesome foods.
2. Discuss what should be done to prevent the spread of colds.
3. Demonstrate how to cross a street safely; how to brush teeth properly.
4. Use the opportunities arising daily in situations for teaching personal health, such as playing during school hours, washing hands at appropriate times during the day, using rest periods, etc.

Problem VI

What Is Happening to Living Things in the Spring?

1. What is happening to animals in the spring?
2. What happens to plants in the spring?
3. How can we grow plants from seeds?
4. How do we use plants for food?

Suggested Activities

1. Take walks or field trips to observe what is happening to living things in the spring. Possible observations that may be made are willows and poplars in bud, toad and frog eggs (found in March or April in ditches, ponds, pools) and insects coming out of hibernation.
2. Observe butterflies and moths emerging from chrysalids and cocoons (collected in autumn).
3. Plant seeds in individual pots. Observe growth daily.
4. Get some toad or frog eggs and put them in a flat, shallow glass dish. When getting eggs be sure and get some of the green scum (algae) which grows in the pond, as well as pond water. The algae supply oxygen for the developing eggs and are later used as food by the tadpoles. When the eggs have hatched put the tadpoles into an aquarium where they will have more water.

5. To show germination of seeds put some seeds between damp paper toweling or blotting paper or in glass jars filled with wet sand. If a jar is used place the seeds next to the glass so that the children may watch them germinate. Lima beans, squash, and corn are seeds that grow quickly. Seeds may be soaked over night if quick germination is desired.

Problem VII

Why Are Rocks Interesting to Us?

1. How are the rocks we find different from each other?
2. How do rocks make soil?

Suggested Activities

1. Collect rocks on a trip. Place in groups according to hard and soft, sharp-edged and those not sharp-edged, and according to color.
2. Break rocks to show how they break down into soil.

Problem VIII

How Can We Make Things Move?

1. What can we do with magnets?
2. How can boats sail on the surface of the water?

Suggested Activities

1. Make a collection of nails, tacks, pins, glass, wood, and rubber. Have children see which ones will be picked up by a magnet. The magnet will pick up only those made of iron.
2. Collect various articles as cork, glass, stones, etc., and have the children experiment to see which ones float in a pan of water and which ones do not.

GRADE TWO

Problem I

How Are Living Things Able to Live Through the Winter?

1. How do we get ready for winter?
2. How do birds live through the winter?
3. How do insects live through the winter?

4. How are frogs and toads able to live through the winter?
5. How are plants able to live through the winter?

Suggested Activities

1. Construct a bird feeding shelf. Keep a record of birds seen feeding during the winter.
2. Makes homes for various caterpillars collected on trips. Watch them spin cocoons and chrysalids. The larva of the Monarch butterfly is found on milkweed plants in September; the Carrot caterpillar is found on carrot leaves and parsley. The adult is the black swallowtail butterfly.
3. Make an artificial ant nest by digging up part of a hill and putting it into a glass jar. Tie a piece of black construction paper around the jar to keep out light. Cake crumbs or sugar will furnish food. Moisten a small piece of sponge occasionally to supply water. Put it on top of the dirt in the jar.
4. Collect goldenrod galls, which are insect homes. Keep in a terrarium or glass jar over winter. Moths, wasps, or flies may emerge from them in the spring.
5. Collect different kinds of seeds. Discuss various ways by which they are carried from place to place. (Wind, water, animals.)
6. Dig up several roots of plants such as dandelions. Put in water so they will continue growing. Show how plants use stored food for growth.

Problem II

How Does the Sun Affect Our Earth?

1. How big is the sun as compared with the earth?
2. How does the sun help us?
3. What makes shadows?

Suggested Activities

1. To show relative sizes of the earth and sun, draw a circle approximately thirty inches in diameter on the board to represent the sun and a circle approximately three-eighths of an inch in diameter to represent the earth.

2. To show that plants need sunshine for normal growth, take three plants (geranium or bean) as nearly alike as possible. Place one in the sunlight, one in a dark closet, and one in a box with a hole in it. Water them. After several weeks compare the plants. The plant which has been in the sun will be green and healthy; the one in the closet pale and sickly; and the one in the box will have grown toward the light.
3. Watch the leaves of a plant growing in the window. Observe the way they grow. Turn the plant around. See how long it takes the leaves to turn around. Keep a written record.
4. Go outside on a sunny day and observe the shadows children make. Discuss what makes shadows.
5. Make a shadow stick, or use a tree or post, to show how shadows are used to tell the time of day.

Problem III

Why Does It Rain and Snow?

1. What makes clouds?
2. How do we know there is water in the air?
3. What makes water come out of the air?

Suggested Activities

1. To make clouds, boil water in a pan.
2. To show water coming out of the air, boil water in a pan. Hold a cold pan or plate over the boiling water. Water will form on the cold object. Heat causes the water to go into the air. The cold causes it to come out of the air as rain or snow.
3. Look at snowflakes under a magnifying glass to see their shapes.

Problem IV

How Do Magnets Work?

1. How do magnets act toward each other?
2. How may a knife be made into a magnet?

Suggested Activities

1. Have the children play with magnets. They will discover that a north and a south end (poles) will pull each other. A north and a north will not pull each other.
2. Make a knife into a magnet by rubbing the blade on the magnet. The knife blade will pull various articles made of iron or steel.

Problem V

How Can We Help Our Bodies Grow?

1. How will food help me grow?
2. Why must I drink water?
3. Why must I play in the sunshine?
4. Why must I have lots of sleep?
5. Why do I need to rest?

Suggested Activities

1. Collect pictures of animals at rest or asleep and put them on the bulletin board.
2. Make posters and charts to illustrate various concepts brought out in class discussion.
3. Find or make rhymes to illustrate concepts brought out in discussion.

Problem VI

How Do Animals Take Care of Their Young?

1. How do our parents take care of us?
2. How do animals on the farm take care of their young?
3. How do birds take care of their young?

Suggested Activities

1. Take a trip to a farm to observe how various animals take care of their young. (Dog with a puppy, cat with kitten, cow with calf, horse with colt.)
2. Observe a pair of birds rearing their young.

Problem VII

How Do Living Things Grow?

1. How do insects grow?
2. How do frogs and toads grow?

3. How do plants grow from seeds?
4. How do plants grow from other parts of plants?

Suggested Activities

1. Obtain silkworm eggs and watch them grow. (Obtainable with directions from General Biological Supply House, Chicago.) Silkworms must have either white mulberry or osage orange leaves for food. The eggs may be saved from one year to another.
2. On a trip, frog and toad eggs may be collected and brought into the classroom to observe. (See Grade One.)
3. Collect pictures showing life history of various insects, frogs, and toads.
4. Make drawings showing life histories of insects, frogs, and toads.
5. Grow seeds in a window box. Dig up several seeds every other day for several weeks. Keep a record of the amount of growth that has taken place.
6. Show that new plants may start from slips. Have children bring slips from different plants such as geranium, Wandering Jew, begonia, and coleus. Start them in sand or water.

Problem VIII

How Do We Use Plants and Animals

1. What plants do we use for food?
2. What plants give us materials for our clothes?
3. What animals give us food and materials for our clothes?

Suggested Activities

1. Make charts showing parts of plants used for food.
2. Make a picture chart showing animals and plants that provide materials for clothing. (Wood, cotton, linen, leather.)

Problem IX

What Makes Things Move?

1. How does the earth pull things to it?
2. How does electricity make things go?
3. How does the wind make things do work for us?

Suggested Activities

1. Throw a ball to show that the earth pulls things to it. Drop different objects from a window. Have a child jump. Have a child try to lift a book with his arm straight out.
2. If the children have an electric train, toy iron, or stove, have them bring it to school to show how electricity makes things go or get hot.
3. Turn the light on and off in the room to show that electricity makes lights work.
4. Make a simple windmill or pinwheel. Take it out of doors on a windy day to show how the wind makes things move. Put a toy sail boat in a pond to show how the wind moves it along. Make a weather vane to observe the direction the wind blows.

Problem X

How Are Rocks Made?

1. How are rock materials pressed together to form other rocks?
2. How does heat melt rock materials?

Suggested Activities

1. Secure a piece of limestone, sandstone, and shale to show how lime from animals' bodies, sand, and mud were formed into rocks by pressure.
2. Take a trip to a river. Pick up sand and mud. Squeeze or press mud and sand together to demonstrate how sandstone and shale may have been formed.
3. Find larger pebbles that have been "cemented" together with sand.
4. Find pieces of lava and show how cooling caused the lava to become hard.

GRADE THREE

Problem I

Why Do Some Animals and Plants Live Where They Do?

1. Why do some animals live on land? In water? In the air? In the ground?
2. How is it possible for plants to live in water? On land?

Suggested Activities

1. Take a field trip to observe various animals and plants that live in different places. Discuss that some have wings to fly, some burrow, some have fins to swim in water, etc.
3. Collect and discuss pictures of places where plants and animals live. (May be made into a scrap book.)
4. Children as a group may make a blackboard chart or picture chart showing the name of an animal, the covering of its body, how it moves, and how it gets food and water.
5. Go to the park, meadow, woods, or school ground to observe different land plants. Note how leaves are arranged to get sunlight.
6. Get the roots of some plants like carrots, sugar beets, or dandelions. Compare the length of their roots. Some plants have long roots that grow toward water. Other plants have roots that are short and spread in all directions in order to get the water in the soil.
7. Show that roots grow toward water. Plant some bean seeds in one end of a glass tank partly filled with earth. Put the seeds against the glass so they can be seen. Keep the soil moist until the plants begin to grow. Then let the soil around the plants get almost dry, but keep soil moist in the other end of the tank. The roots will grow toward the moist soil.
8. Show that plants need air to grow. Cover the soil around the stem of a growing plant with paper. Place a glass jar over the plant and place it in the sunlight for a day.
9. Show that plants need water to grow. Take two plants about the same size. Put them in the sunlight. Water one of them every day. Do not water the other.
10. Show that stems and leaves grow toward light. After a bean plant has grown several inches in height, bend the stem over away from the light and fasten it down to the ground with a piece of wire. Leave it for several days and then remove the wire. After a time the stem will grow toward the light.

Problem II

How Are Animals Protected?

1. How do animals' ears, eyes, feet, and mouths protect them from their enemies?

2. How do the homes of some animals help protect them?

Suggested Activities

1. Make a picture chart showing different parts of animals that are used as a means of protection.
2. Study animals in an aquarium or terrarium to see how their body parts help protect them.
3. Collect unoccupied birds' nests and wasps' nests to see how homes of animals help protect them.
4. Make drawings of a cross-section of a beaver's home, trap-door spider's home, and others.

Problem III

What Do We See in the Sky at Night?

1. What makes the moon shine?
2. Why does the moon seem to change its shape?
3. How can we find the Big Dipper?
4. What is the Milky Way?

Suggested Activities

1. Make a star map showing the Big Dipper in the northern sky.
2. Demonstrate, in a dark room, how the moon receives light from the sun. Use a desk lamp or flashlight to represent the sun. Have a child hold a large ball, representing the moon. Turn the light on so it will shine on the ball. Turn out the light. The ball can be seen only when the light shines on it.
3. Show why the moon seems to change its shape. Use a desk lamp for the sun. Let one child represent the moon and another the earth. Have the child who represents the moon walk around the earth with his face always turned toward the earth. When the sun shines on the child's face, the moon is full. As the child keeps on moving the sun will shine on only a part of his face, thus showing the various shapes of the moon. When the child's face is dark, the moon is new. We can't see the new moon.

Problem IV

How Does the Surface of the Earth Change?

1. How does water carry away soil?
2. How does the wind move soil?
3. How does water break rocks?
4. How do we change the surface of the earth?

Suggested Activities

1. Show how water, when it freezes, breaks rocks. Fill a jar with water, screw the lid on and put outside to freeze. When it is frozen the jar will break.
2. Take a trip to see examples of rocks weathering.
3. Break different rocks until very fine to show that rocks make soil. Water breaks rocks to make soil.
4. Take a trip to a river or a stream to see how water has carried fine soil and washed away the banks of the stream.
5. Observe sand and dirt that have been piled up along roads and fences by the wind.

Problem V

How Is Work Made Easier?

1. How do we use the wind to help us work?
2. How do we use water to help us work?
3. How do machines help us do our work?
4. How does heat help us do our work more easily?

Suggested Activities

1. Demonstrate the use of a spade and a hammer, both simple machines (levers) that make work easier. A seesaw, also a lever, is another simple machine which helps children lift each other.
2. Demonstrate the use of a pulley, another simple machine. Example: Raising the flag to the top of the pole by means of rope and pulley.
3. Show how wheels make work easier. Push a heavy box along the floor. Then put the box into a wagon to show how wheels make it easier to move.
4. Make a simple waterwheel.

5. If a child has a toy steam engine show how steam makes the engine move.
6. Show how a windmill pumps water for us.
7. Show how air works for us.
 - (a) Place a paper bag under a book. Blow air into the bag. As the bag becomes filled with air, the air raises the book.
 - (b) Press on the rubber end of a medicine dropper, holding it near some flour. Release the rubber end. Some flour will enter the glass tube.

Problem VI

How Can I Form Good Habits?

1. Why must I stop, look, and listen when crossing a street?
2. Why must I eat the right kind of food?
3. Why must I take care of my skin, mouth, nose, ears, and eyes?
4. Why must I sit and walk properly?
5. Why must I have good manners?

Suggested Activities

1. Have children plan a lunch that will include good tooth-building foods. Pictures of foods may be used to make a chart.
2. Demonstrate the proper method of brushing the teeth, blowing the nose, washing hands.
3. Have posture cops. Every pupil has a posture tag at the beginning of the school day. Cops remove these tags as pupils are observed who are not maintaining a good posture.
4. Cut from construction paper or make stick figures showing correct and incorrect reading, sitting, walking, and standing positions.
5. Give pupils responsibility for the adjustment of shades.
6. Have children put hands over both ears and over just one ear at a time, to see how well they could get along with defective hearing.
7. Plan a wholesome lunch for a school party.

8. Groups of children may demonstrate in class, correct and incorrect ways to cross a street. Good and bad manners may also be demonstrated.
9. Visit a dairy or a grocery store. On the way practice crossing streets in the proper manner.

Problem VII

How Are Stones Useful?

1. How did the Indians who lived in Colorado use stones?
2. How do we use stones?

Suggested Activities

1. Have children collect rocks. The most common ones they will find are shale, limestone, sandstone, quartz, and granite. Test for limestone—a drop of diluted H Cl causes bubbles to form on the rock. (H Cl is commercially known as muriatic acid.)
Sandstone can be identified by feeling it. It scratches glass. Shale is a rock formed in layers which smells like mud when it is moistened. Quartz can not be scratched with a file and it will scratch glass. Granite is made up of quartz, mica, and feldspar.
2. Take a trip to find out what kinds of stone were used for various buildings in the community.

Problem VIII

How Do We Get Food?

1. Where do our different foods come from?
2. How do green plants get materials for making foods?
3. What kinds of soil are best for plant growth?

Suggested Activities

1. List common foods and tell from which countries they come.
2. Arrange on the bulletin board a large world map surrounded by pictures of foods. With strings, or arrows made of paper, have the children connect the foods with the countries from which they came.
3. Show what kinds of soil are best for plant growth. Get eight flower pots or coffee cans. Fill two of them with sand; two with clay; two with humus (decayed leaves,

etc.); and two with loam. Plant corn seeds in one can of sand and bean seeds in the other. Do the same with the other cans of soil. Water them every day. Record results. Plants grow the best in loam.

GRADE FOUR

Problem I

How Are Things in the World Put Into Groups?

1. How are living things similar to each other?
2. How are mammals alike?
3. How are fish different from other animals?
4. Why are birds grouped together?
5. How are all insects alike?
6. How are reptiles different from other animals?
7. How are amphibians alike?
8. How are plants grouped?

Suggested Activities

1. Have the children bring as many living and non-living things to school as possible, such as rocks, flowers, or insects they have collected, or their pets. Build cages for pets and larger animals. A field trip may also contribute to the variety of living and non-living things. Make a terrarium and aquarium for some of the animals and plants collected. (See pages 334 and 335 for directions.)
2. Have the children group the things collected into "living" and "non-living" groups, according to characteristics. Group the "living" things into plants and animals. Group animals into fish, birds, mammals, insects, spiders, amphibians, and reptiles according to similar characteristics and structures.

Problem II

How Do Living Things Live and Grow?

1. How do plants live and grow?
2. How do frogs and toads live and grow?
3. How do insects live and grow?
4. How do we live and grow?

Suggested Activities

1. Secure silkworm eggs to show the life cycle of a moth. (See page 286.)
2. Get frog or toad eggs to show life history.
3. Obtain any other animals that can be found in the community to show how they grow.
4. Soak lima beans overnight. Open them and have the children find the young plant and food stored for the young plant.
5. Show plant growth.
 - (a) Get a large box approximately 2'x1' and fill it with soil. Every two days plant three corn and three bean seeds over a period of several weeks. Water them. Put markers with dates to show when each group was planted. Record growth results of each group.
 - (b) Pull up several of the larger plants. Wash off the soil. With a ruler and India ink mark the roots at intervals of one-fourth inch starting near tips. Plant them in a box of damp sawdust and leave them for approximately a week. Pull up and notice that the marks are farther apart near the tip of the roots, showing that root growth takes place near the end.
 - (c) Examine some twigs. Measure from the bud at the tip to the first ring. Each year, when the bud grows, a ring of rough bark is left around the twig. Each ring indicates one year of growth.
 - (d) Examine a tree that has been cut down to find growth rings.
 - (e) Draw around the leaf of a growing bean plant or any other plant. Mark the date. After a week draw around the same leaf. Note that the leaf has grown in size.

Problem III

How Do Some Living Things Live and Work Together?

1. Why do people live together?
2. How do ants live and work together?
3. How do bees live and work together?

Suggested Activities

1. Take a walk to find an ant hill. Watch ants at work.
2. Dig up an ant hill for class observation. (See page 283.)
3. Visit an apiary to observe how bees work. If an apiary cannot be visited, have someone in the community, who raises bees, talk to the class.
4. Observe bee hives in the school room. Such hives for school room use may be made or purchased. (Write to A. I. Root Company, Medina, Ohio; or Austin Workshops, Austin, Texas, for price of school room bee hives.)

Problem IV

How Do the Movements of the Earth Affect Conditions on the Earth?

1. How does the earth move?
2. What causes seasons?
3. Why do we have night?
4. Why do we have day?

Suggested Activities

1. Show the cause of seasons. Use an old tennis ball to represent the earth. Put a wire through the ball to show the tilt of the earth on its axis. Use a desk light or flashlight to represent the sun. Move the earth around the sun showing the earth's position during different seasons.
2. Show why we have days and nights. Use a desk light or flashlight for the sun. Use one of the children as the earth. Have him turn around slowly as the earth turns around. When the light is on his face, it is day; when the light is shining on the back of his head, that part of the earth is having day. Let the child's nose represent the place in which the children live. A globe of the earth may be used instead of the child.
3. Pictures on the bulletin board may show various activities carried on during the various seasons of the year. In discussion bring out comparison of clothing worn, play activities, weather conditions, etc.

Problem V

What Do We See in the Sky at Night?

1. What causes the phases of the moon?
2. Why do constellations appear in the sky during different seasons?
3. What planets do we see at night?
4. What are meteors and meteorites?
5. What are comets?

Suggested Activities

1. To show the phases of the moon have the children cut from yellow construction paper the various phases of the moon they have seen. Paste the cut pieces on black construction paper.
2. Make a star map showing the position of some of the constellations in the sky. (Orion, the Big Dipper, the Little Dipper, Cassioplín.)
3. Make an "umbrella planetarium." On the underside of an umbrella mark the names and outlines of the constellations by colored embroidery thread and make button-hole openings for the stars (star stickers may be used). Hold the umbrella up to the night sky and match the holes with the stars of the Big Dipper. The handle of the umbrella will point to the North Star. Other constellations can be found after locating the Big Dipper. Read the names of the constellations by using a flashlight.
4. To show how the constellations appear to change positions in the sky use the "umbrella planetarium" attaching the handle of the umbrella securely to the iron ring around a globe directly above the North Pole. The umbrella should not turn with the globe. Rotate the globe and show how the constellations seem to change.
5. Make a diagram showing the planets in our solar system revolving around the sun.

Problem VI

How Do Our Bodies Work?

1. What gives our bodies their shape?
2. How do our bones protect our bodies?

3. How are our bodies covered?
4. Why are we able to move our arms and legs?
5. How do our bodies get air?
6. How do our bodies use the food we eat?
7. How do we know what is going on around us?
8. Why do our teeth decay?
9. Why do we lose our baby teeth?
10. How can we keep our bodies working properly?

Suggested Activities

1. To show that some foods are easily dissolved, dissolve some sugar in water. Pour the sugar water through filter paper. Taste the sugar water that came through the paper. It will taste sweet. Salt will also dissolve. Our body uses food that is dissolved.
2. Test for starch. Get as many different kinds of food as possible. Put a drop of iodine on the food tested. Iodine turns starch blue.
3. Dissolve some starch in water. Pour it through filter paper. The liquid is clear. With iodine test for starch. It does not turn blue. The starch was not dissolved.
4. Cook the starch in water. Filter it. Test liquid for starch. Some starch dissolves when cooked.
5. To show that starches are changed to sugars in the mouth, test a cracker for starch. Have the children eat some crackers, chewing them in the mouth for about a minute. The cracker will become sweet in taste. Starches must be changed to sugars in the mouth before they can be digested.
6. To show that some foods contain fat, use a clean piece of blotting paper or plain brown paper. Put butter and as many other foods as possible on the paper. Foods that have fat in them make a grease spot on blotting or brown paper.
7. To show that some foods contain carbon, put a spoonful of chopped raw potato into a tin can. Heat the potato until all the gas and water have been driven off. Carbon is left in the can. Do the same with cheese, dried beans, sugar, and any other foods available.

Problem VII

How Do Magnets Work?

1. How do magnets affect each other?
2. How do we make a compass?

Suggested Activities

1. Demonstrate the law of magnets.
 - a. Take two magnets and touch north poles and also south poles. Like poles repel each other. Put a north pole and south pole together. Unlike poles attract each other.
 - b. Tie a string to the middle of a bar magnet and hang from a wooden frame. Hold the north pole of another magnet close to the one that is hanging from the frame. The north pole will be attracted to the south pole of the suspended magnet.
 - c. Lay a compass close to the suspended magnet. The north pole of the magnet will point in the same direction as the needle of the compass, north. The other end of the magnet will point south, indicating the south pole.
2. To show the magnetic field of a magnet, take some iron filings and sprinkle them on top of a piece of glass. Hold a magnet under the glass. The filings will arrange themselves around the poles of the magnet.
3. To show that magnetism will pass through substances that it will not attract, put some tacks or pins on the table. Place a piece of paper over them. Put the magnet over the paper. The magnet will pick up the tacks. Use glass and a thin piece of wood to show the same thing.
4. To make a compass, magnetize a needle by stroking it on a magnet. Float a piece of cork in a pan of water. Place the needle on the cork. The cork will slowly turn around. The needle will point north.

Problem VIII

How Do Rocks Tell Us About the Plants and Animals of Long Ago?

1. What are fossils?
2. Where are fossils found?

3. How were they formed?
4. What can we learn about the plants and animals of long ago by studying fossils?

Suggested Activities

1. Visit a museum to see fossils in rocks.
2. If there are fossil beds in the community visit them.
3. Examine coal to see if there are any leaves or prints of leaves.
4. Have children bring in rocks containing fossils.

GRADE FIVE

Problem I

How Are Living Things Able to Survive Seasonable Changes?

1. How do animals migrate?
2. What happens to animals when they hibernate?
3. How do animals change color as the seasons change?
4. How are plants affected by seasonable changes?

Suggested Activities

1. Bird clock. Make a large clockface of cardboard with each hour of the day representing one month of the year. A hand made of cardboard indicates the month. Each child who sees a bird during the month reports it to the group, giving a description of the bird and some interesting thing about it. Paste a picture of the bird on the cardboard clock under the month. At the end of the school year the children can tell from the bird clock the birds that were permanent, winter, spring, or summer residents, as well as those birds that are transient visitors in the locality.
2. On outline maps of North and South America, show the migratory route of some of the common birds.
3. Make food charts of some of the common birds.
4. Observe the migration of animals as deer, elk, mountain sheep, and monarch butterflies.
5. Visit a pond or field to discover animals hibernating. Look under stones for snakes and under decaying logs for salamanders. Along the shore, buried in the mud, there may be frogs and crayfish, as well as other animals.

6. Some animals such as snakes, frogs, and toads may hibernate in terraria. Have the children observe these animals.
7. Place pictures on the bulletin board to show which animals hibernate, migrate, or change color.
8. Observe trees whose leaves fall in the autumn; compare with needles on evergreen trees.
9. Notice the winter buds on deciduous trees.
10. Have children bring to school different parts of plants showing how food is stored in the roots, bulbs, leaves, and stems.

Problem II

How Do Living Things Get Food?

1. How do animals get food?
2. How do green plants get food materials?
3. How do plants that are not green get food?
4. How do we get food?

Suggested Activities

1. Observe animals in a zoo, on a farm, in cages in the school-room, aquaria, terraria, pet show, or any other place in the community where animals are found.

Make a series of drawings showing the various structures that animals use in getting food. One drawing may show the beaks of various birds—those that crack seeds, tear their food, etc. Another drawing may show how the teeth of various animals help them in getting their food.

Picture charts showing animals, the food they eat, and structures used in obtaining their food may be used on the bulletin board.

2. Have the children examine the parts of a plant (root, stem, leaves, and flowers). Note the tiny root hairs on the root. Look at the root hairs under a magnifying glass.
3. To show how water is carried through the stem to the leaves, take a piece of celery and let it stand in water to which a small amount of red ink has been added. After the stem has absorbed the solution, cut a cross section of the stem. Note the vascular bundles.

4. To show that plants need sunshine for making food, take a geranium or bean plant and pin a round piece of cardboard in the center of one of the leaves. Directly under the piece of cardboard, on the underside of the leaf, pin another piece of cardboard. Pin several leaves in this manner. Allow the plant to stand in the sunlight for several days, then break off the leaves that have been covered with the cardboard. Remove the cardboard and boil the leaves in alcohol. Remove the leaves and wash them in water. Put some iodine on the leaves. The iodine will cause the starch in the leaves to turn dark blue. The place where the cardboard was placed will not turn blue as no starch could be made.
5. To show that green plants give off oxygen as they make food, partly fill a glass jar with water. Put elodea or some other water plant into it. Turn the jar upside down in a pan of water and let it stand in the sun for several days. Cover the mouth of the jar with a piece of tin, remove the jar from the pan of water, and turn it right side up. To show that oxygen is in the jar, remove the tin cover and quickly lower a glowing splinter into it. The flame will flare and brighten in the presence of oxygen. Some of the water will have been pushed out of the jar by the oxygen.
6. To show how plants that are not green get their food, take a piece of bread, dampen it, and leave it exposed to the air for a short time. Place bread in a glass jar, cover it, and put it in a dark, warm place. After several days mold will be found growing on the bread.
7. Grow bacteria. Into each of five clean jars put a slice of raw potato. Seal the jars and boil for fifteen minutes. Leave one jar unopened as a control. Open others and touch one potato with your finger, shake dust on another, let a fly walk on one, etc. Cover the jars and allow the bacteria to grow for several days by putting the jars in a dark, warm place. Observe the colonies of bacteria growing on the slices of potato. The bacteria got their food from the potato.

Problem III

How Do Living Things Make Other Living Things Like Themselves?

1. How are seeds produced?
2. How do plants that are not green make other plants?
3. How do frogs and toads develop?
4. How do insects grow?
5. How do eggs develop into chickens?

Suggested Activities

1. Observe a frog egg under a magnifying glass and the cells of an onion under the microscope to develop the concept of a cell. Water from a pond may also have one-celled animals and plants in it.
2. Watch the development of frog or toad eggs.
3. To keep live insects in various stages of growth for observation carry on the following procedure: Grow plants which the insects use for food. When the plants have grown several inches, place a lamp chimney over the plants, put the insects that feed on that kind of plant in the lamp chimney, and place a small piece of wire screen over the top.
4. Visit a greenhouse or flower garden to observe spore bearing ferns and flowers going to seed.
5. Mount pictures from seed catalogues showing the life cycle of plants, such as seeds, immature plants, plants in flowering stage, and seeds on the plant.
6. Soak some bean seeds. Give one to each child and have him find the embryo plant inside the bean.
7. Plant bean seeds and observe the life cycle of the plants.
8. Suspend a moistened sponge in a glass jar. Put wheat seeds in the holes of the sponge. Cover the jar. Watch the wheat seeds grow.
9. Have children bring seeds to school and plant them to see what kinds of plants grow from them.
10. Obtain flowers such as apple blossoms to show the petals, sepals, pistils, and stamens. By means of diagram explain pollination and fertilization.

Problem IV

Why Are There Changes in the Weather?

1. What causes wind?
2. How does air pressure affect weather?
3. What causes precipitation?
4. What does the Weather Bureau do for us?

Suggested Activities

1. Show that air occupies space.
 - (a) Fill a dish with water. Put a glass over a cork and push the glass to the bottom of the dish. The cork will go to the bottom of the dish. The air in the glass pushed the cork down.
 - (b) Get two bottles with corks. Fill one with water and leave the other empty. Place a small funnel in each cork. Ask a child to fill the bottle that has water in it. It can't be filled because it is already full of water. Have him use the bottle that has no water in it. It can not be filled either as there is air inside the bottle. To get the water inside the bottle it must be tipped so that the air can come out as the water goes in the bottle.
2. To show that air presses up, fill a glass with water. Cover the glass with a piece of heavy paper, pressing the paper down firmly upon the edge of the glass. Turn the glass upside down. The water will not come out. The air presses up on the paper, keeping the water inside the glass.
3. To show that air presses down, take a bottle, fill it with water and cap it. Put a straw through a hole in the bottle cap. Suck up on the straw. The water will not come up in the straw. Remove the cap and then suck up on the straw. The air presses down on the water and makes it come up into the straw.
4. To show air has pressure, use a small syrup can, with a tight lid, that has a hole punched in the side. Hold your finger over the hole and fill the can full of water. Leave the lid off. When you take your finger away from the hole, the water spurts out. Fill the can again and put on the lid. Take your finger away from the

hole. The water will not come out of the hole because the air can not press down on the water and force it out of the hole.

5. How to make a barometer. Secure a glass tube about thirty inches long. Close one end and fill the tube with mercury. Hold your finger over the open end and slowly turn the tube upside down in a dish of mercury. Fasten the tube to a yardstick which has been placed behind it. Air pressure holds the mercury in the tube. By means of the yardstick the column of mercury may be measured in inches. At sea level the weight of the air balances a column of mercury thirty inches high and is equal to fifteen pounds pressure per square inch.
6. Show how convection currents (the cause of wind) move. Obtain a small wooden cheese box. Cut two holes near either end of one side of the box. Place a lamp chimney over each of the holes. Place a candle under one of the lamp chimneys. On the open side of the box fit a piece of glass so that the movement of smoke may be observed. Light the candle under the lamp chimney. Light a splinter, let it burn for a moment, and then blow out the flame. While the splinter is still smoking insert it half way down in the lamp chimney that does not have the candle under it. Note the movement of the smoke. The smoke will move down the cold chimney and up the warm chimney. Cold air, which is heavier than warm air, sinks into the box. As the air becomes warm over the candle it expands and rises. Now put the splinter through the center of a three-inch square of cardboard. Light the splinter, blow out the flame, and place it over the lamp chimney that has no candle under it. Press the cardboard tightly against the top of the chimney. The splinter will be down in the chimney. The smoke will not move, because there is no cold air coming into the lamp chimney and sinking into the box.
7. To show how water condenses and falls as rain, boil some water in a test tube or pan. Hold a cold plate over the boiling water. Drops of moisture will collect on the plate.

8. Keep a record of the weather, including such things as the barometer reading, temperature, condition of the sky, and direction of the wind.
9. Take a trip to the Weather Bureau.
10. Interview Weather Bureau officials.
11. Secure weather maps from the United States Weather Bureau and learn to read them.
12. Collect pictures showing the work of winds, blizzards, dust storms, floods, tornadoes, etc.

Problem V

How Does Electricity Help Us?

1. How are electro-magnets made and used?
2. How does electricity come into our home?
3. How does electricity work for us?

Suggested Activities

1. How to make an electro-magnet. Use a nail as the core and wrap some light insulated wire around it (about forty times). Scrape the insulation from the ends of the wire and fasten securely to the two terminals of a dry cell. Hold the nail near some tacks. The nail will attract the tacks. Disconnect one end of the wire from the dry cell and the nail will drop the tacks because the flow of electricity has stopped.
2. Make a simple telegraph set or have the children bring a ready made one from home. Show how it works.
3. Get some switches that are not in use. Connect them to several dry cells and demonstrate how they work.
4. Connect an electric bell to several dry cells and show how the bell rings.
5. Secure a transmitter and a receiver of a telephone and demonstrate how they work.
6. To show how a dry cell is made, take an old cell apart showing the zinc, carbon rod, etc.
7. Get a burned out fuse and a new fuse and show what happened when there was a short circuit in the house.
8. Take a trip to an electric light plant in your vicinity to see how electricity is generated for the community.

9. Interview an electrician.
10. Have reports on the invention of the telephone, telegraph, radio, and Thomas Edison and his inventions.
11. Visit a radio station.
12. Display pictures of electrical appliances.
13. Make posters showing safety precautions when working with electricity.
14. Visit a railroad station to see how the telegraph works.

Problem VI

How Do Chemical Changes Affect Us?

1. What are chemical changes?
2. How do some chemical changes help us?
3. What are some harmful chemical changes?
4. How can we prevent harmful chemical changes?

Suggested Activities

1. Show various chemical changes.
 - a. Taste a glass of sour milk and a glass of sweet milk and notice the difference. Test each with litmus paper. Add baking soda to the sour milk to make it sweet again. Test with litmus paper.
 - b. Show how iron rusts. Wet the inside of a test tube or small bottle. Fill the test tube or small bottle with iron filings. Shake the tube until the filings adhere to the sides of the tube. Invert the tube in a pan of water. Let it stand for twenty-four hours. Note that the iron filings have rusted. (When the iron rusted, the oxygen which was in the air in the test tube combined with the iron to form iron oxide. Water rose in the test tube to replace the oxygen that had been removed from the air. This was due to the fact that the air pressure was greater on the outside of the tube than on the inside, thus pushing the water up into the tube.) With your finger cover the mouth of the test tube and lift it out of the water, keeping the water in the tube. Turn the test tube right side up and quickly lower a glowing splinter of wood into it. As there is no oxygen in the tube, the glowing splinter will go out.



Experiments are fun and we learn from them too

- c. Show how paint prevents iron from rusting. Dip half of a new nail into paint. When the paint has dried, put the nail into a glass jar. Put a wet sponge into the jar with the nail and screw the lid tightly on the jar. After several days observe which part of the nail has rusted.
 - d. Show how silver tarnishes. Mash the yolk of a hardboiled egg and leave a silver fork in the mashed egg yolk over night. The prongs of the fork will be black. A new material has formed that is neither sulphur or silver.
 - e. Show what happens when sulphur and iron are heated together. Mix equal parts of sulphur and iron. With the use of a magnet separate the iron from sulphur. Then mix the two elements and heat them in a test-tube until they seem to be united. Cool the material. (In order to remove the material the test tube may have to be broken.) Try to pick up the material with a magnet. The new material has neither the color of sulphur or the characteristics of iron.
2. Show that burning of wood is a chemical change.
 3. Make a simple fire extinguisher. Secure a wide mouth pint bottle and a cork to fit the top. Make a small hole in the cork into which fit a glass tube. Put about a cup of water into the bottle to which several tablespoons of soda have been added. Then stand a small bottle of vinegar in the soda water. Fit the cork into the bottle. To put out the fire, which has been made in a small metal pan, quickly turn the bottle upside down over it. Vinegar and soda mixed form carbon dioxide. The carbon dioxide keeps the oxygen away from the fire and puts it out.

Problem VII

How Does Heat Affect Materials?

1. How does heat affect solids?
2. How are liquids affected by heat?
3. How does heat affect gases?

Suggested Activities

1. Show how heat affects solids.
 - a. Melt ice to show how solids may be changed to liquid.
 - b. Stretch a piece of wire between two ringstands, drawing it as tightly as possible. Hang a weight in the center of the wire. Heat the entire length of the wire. Note that the weight hangs lower than before the wire was heated. Heat causes the wire to expand or get longer.
 - c. Wrap wire around a piece of iron pipe so it will slide easily. Heat the entire iron pipe. Try to slide the wire. Heat caused the iron pipe to expand.
2. Show how heat affects liquids. Fill a bottle with water. (Put red ink in the water so it can be seen more readily.) Cork the bottle with a rubber stopper which has had a glass tube fitted in it. When the bottle is corked the water will rise in the glass tube. Tie a string at the point where the water has risen. Heat the bottle of water. Tie a string at the new water level. Heat causes water to expand.
3. Show how heat affects gases.
 - a. Take an empty bottle and put a toy balloon over the mouth of it. Heat the air in the bottle. The air expands, causing the balloon to fill with air.
 - b. Take a flask with a stopper into which a glass tube has been fitted and heat the air in the bottle. Invert the glass tube in some inky water and place a piece of ice on the flask. The ice cause the warm air inside the bottle to contract, allowing the inky water to be drawn into the flask.
4. Demonstrate convection currents. Show how buildings are heated by warm air expanding and being pushed up into the furnace pipes by the cold air.
5. Visit the furnace room to see what system of heating is used.

Problem VIII

Why Must I Care for My Body?

1. Why must I have good posture?
2. Why must I chew my food properly?

3. Why must I select the proper kind of food?
4. What toilet habits must I have in order to keep well?
5. What can I do so other people will like me?

Suggested Activities

1. Weigh and measure the group. Prepare a weight graph.
Discussion of this graph can lead to a study of the selection of proper foods.
2. List foods helpful for daily elimination.
3. Make a self-check on appearance, using a questionnaire set up by pupils, listing those qualities contributing to a pleasing appearance.
4. Demonstrations: proper washing of hands; ingredients of a wholesome school lunch; relaxation; a manicure.
5. Secure a full length mirror. On coming before the mirror children are to make such changes in their posture as they see necessary.
6. Inspect the seating, lighting, and other school conditions which may affect posture. Have pupils suggest possible remedies.
7. Make a measurement of the pupils' change from their habitual posture to a corrected one. A pupil stands sidewise to a paper on the wall or the blackboard. Mark the point at right angles with topmost point of the head, and the highest position of the chest, using a point two inches below the top of the breastbone. This is done by projecting a ruler from the point to the board or paper, and marking. Now have the pupil pull in and up the abdominal wall and lift the chest. Repeat the markings. Measure the distance between the old and the new marks. Let each child keep a record and see how much he can improve his lift.
8. Demonstrate proper shoes for growing boys and girls.
9. Study the skeleton pointing out the interrelationships of all parts of the body and the effect of posture upon the bony frame-work.
10. Use charts and graphs to illustrate various phases of posture.

GRADE SIX

Problem I

How Can We Help Conserve Our Natural Resources?

1. How can we save our soil from blowing away?
2. How can we save our soil from washing away?
3. Why should we conserve water?
4. How can we protect our wild life?

Suggested Activities

1. Visit a field where the top soil has been blown away.
2. Interview forest rangers, water commissioners, and others interested in conservation.
3. Visit a reservoir to see how water is stored for future use.
4. Visit a bird or wild life sanctuary if there is one in the community.
5. Write to the State Conservation Department of the State Agricultural College at Fort Collins to see what Colorado is doing to conserve soil, water, and wild life.
6. Make posters on conservation. Display them in the building.
7. Help to establish a game refuge in the community or help in a reforestation program.
8. Build a winter feeding station for birds.
9. Make maps showing forests in Colorado today and those present several hundred years ago.

Problem II

How Can We Learn How Old the Earth Is?

1. How do rocks tell us about the age of the earth?
2. How do coal beds give evidence that the earth is very old?
3. How do fossil animals help tell us how old the earth is?
4. How has the change in the appearance of the earth helped us to know that the earth is very old?

Suggested Activities

1. Collect rocks and group them according to the way in which they were formed (sedimentary, metamorphic, and igneous rocks).

2. Make diagrams showing how coal beds may have been formed.
3. Take trips to canyons, sand dunes, river beds, excavations, fossil beds, etc.
4. Look at pictures of prehistoric life. Compare with animal and plant life of today.
5. Make a chart showing how plants and animals developed on the earth.
6. A chart may be put on the bulletin board showing the relative length of time of each of the different periods of the earth's history.

Problem III

How Do the Many Heavenly Bodies Affect Each Other?

1. How is the earth affected by the sun?
2. How is the earth affected by movements of the moon?
3. How is the earth affected by sun spots?
4. How do the sun and earth affect meteors and meteorites?
5. How do the sun and earth affect comets?

Suggested Activities

1. Make a diagram showing the relative sizes of the planets with their moons, as well as relative distances from the sun.
2. Look at the planets through a telescope, if one is available in the community.
3. Demonstrate the phases of the moon. (See page 289.)
4. Demonstrate an eclipse of the sun and of the moon. Have one child hold a light to represent the sun, another child carry the globe (earth), and a third child a baseball representing the moon. When the moon passes directly between the sun and the earth, there is an eclipse of the sun. When the moon passes into the shadow of the earth there is an eclipse of the moon.
5. Draw diagrams showing eclipses of the moon and the sun.
6. Draw diagrams showing high tide and low tide.
7. Draw diagrams showing the paths of some of the comets.
8. Visit a museum to see meteorite specimens.

9. To demonstrate how the planets stay in definite paths around the sun, have a child whirl a ball to which a strong rubber band has been attached. The harder the child whirls the ball the farther out the ball will go. When the pull of the rubber band is equal to the force that pulls the ball out, it will stay whirling in this path.

Problem IV.

How Do We Use Lights?

1. How is light produced?
2. How do we see?
3. How does light affect our lives?

Suggested Activities

1. Make a picture chart showing the development of light from the early lamps to electric light bulbs.
2. Show that light travels in straight lines.
 - a. Cut a hole the size of a quarter in a large piece of black construction paper. Pin the paper over the window and darken the room. Observe the light coming through the hole. Put chalk dust in the path of the light if it can not be seen plainly.
 - b. Take the backs of two tablets. Punch a small hole in each piece. Hold one piece in each hand. Hold the pieces in such a manner that the light from a lighted electric lamp will pass through the two holes in the pieces of cardboard. Move one piece of cardboard. The light can not be seen. Light travels in straight lines.
3. Show that light passes through some materials and not through others.
 - a. Hold a book in the sunlight. A shadow will be made. The sunlight can not pass through the book.
 - b. Use a piece of glass and a piece of cellophane in the same way. Light passes through transparent materials.
 - c. Use a mirror. The mirror reflects light.

4. To show that light rays bend when they pass from one transparent material into another, put a spoon, ruler, or pencil slanting in a glass of water. Part of the spoon is out of the water and in the air. As light passes on a slant the light is bent. This will make the spoon appear to be bent.
5. Hold a prism in the sunlight. The sides of the prism are slanted, therefore, the light is bent as it passes through the prism. Sunlight is made up of violet, indigo, blue, green, yellow, orange, and red. A rainbow after a rain is caused by drops of water in the air acting as prisms.
6. Draw a diagram to show how our eyes help us see.
7. Look through a microscope to observe how this instrument helps us see.
8. Observe how light is used in our homes and buildings and to light our streets at night.
9. Show that the color of an object is determined by the light ray reflected from it. Cover the bottom half of a sunny window with a sheet of wrapping paper. Make a small hole in the center of the paper. Place a piece of white paper in such a manner that the sunlight coming through the hole will fall on it. When the sunlight falls on the paper, it looks white. The sunlight strikes the paper and reflects the white color. Use a piece of blue glass instead of the white paper. The glass allows only blue light to shine through it. Other pieces of glass may be used as red, green, etc. Red glass lets only red shine through it, etc.

Problem V

How Do Machines Make Work Easier?

1. How are magnetism and electricity used to make work easier?
2. How are simple machines used to make work easier?

Suggested Activities

1. Use suggestions for previous grades, particularly make electromagnets. (See page 305.)

2. Use a dry cell and a flashlight bulb and socket. Connect a piece of insulated copper wire to one of the posts of the dry cell and the bulb socket. Connect another piece of wire to the other post of the dry cell and socket. The bulb will light. There is a complete circuit of electricity.
3. Bring an electric toaster to school and show how it will work when the cord is fitted into the sockets. Note the two prongs that fit into sockets. Compare with above experiment.
4. Make a list of safety rules in connection with electricity.
5. Observe how telephone, door bell, telegraph, and switch work. (See suggested activities, page 305.)
6. Find out what materials are good conductors of electricity and poor conductors of electricity.
7. Examine an electric light bulb. Note the tungsten filaments and two terminals at the base of the bulb where the current flows into and out of the bulb.
8. Make a list of electrical appliances used in the home and in the school.
9. Visit the light plant to find out how electricity is generated for the community.
10. Take group to observe machines at work such as a steam shovel, road grader, and weed cutter.
11. Have the children bring a collection of simple machines such as a pair of scissors, screw driver, pliers, egg beater, plane, etc. Group them as to levers, inclined planes, pulleys, and wheels.
12. Show how levers work.
 - a. Cut a piece of paper with a pair of scissors, first near the points then near the fulcrum. Then have a child try to cut a piece of wire in the same manner. More force will be needed to cut the wire than the paper. Using the same procedure cut the paper and wire with wire snips. Much less effort is needed to cut wire with snips than scissors.
 - b. Nail two pieces of board together at right angles. Try to make them move back and forth like a door. The hinge makes the pieces of board easy to move back and forth.

Then use a hinge instead of nailing the boards.

13. Show how inclined planes make work easier. Get a board about three feet long. Let one end rest on the floor and the other on a low chair. Fasten a spring balance scales to a heavy object and have a child lift the object by the scales. See how much it weighs (how much force it takes to lift it). Tie a rope to the scales and pull the object by the scales up the inclined plane. Read the scales as a child pulls the object. Compare the differences. Put the object in a toy wagon, fasten the scales to the wagon, and pulling by the scales, draw the wagon up the inclined plane. Less force is needed to pull it up when the wagon is used, since wheels reduce friction.
14. Show how pulleys make work easier. Get a pail of sand and fasten a spring balance to it. Lift it straight up. Notice the weight of sand. Fasten a pulley to the blackboard molding. Fasten the end of the pulley rope to the scales. Lift the sand in the pail, using the pulley. Notice the weight when using the pulley. Compare the two weights. Demonstrate how a pulley is used in drawing water from wells.
15. Bring toys to school and pick out simple machines in them.

Problem VI

How Is Sound Produced?

1. How does sound travel?
2. Why are some sounds different from other sounds?
3. How do we hear?

Suggested Activities

1. Show how sounds are made.
 - a. Place one end of a steel knitting needle on the edge of the desk. Pull up the needle quickly and release it. The needle will vibrate. A sound can be heard.
 - b. Strike a tuning fork or silver fork against a piece of wood. A sound can be heard. After striking the tuning fork again, plunge it into a pan of water. Because of the vibrations of the tuning fork, water will fly in all directions.

- c. Have children put their hands up to their throat and speak. Feel the vibrations. When people speak their vocal chords vibrate.
2. Have any one of the group who has a string instrument bring it to school. Pluck the strings. The strings will vibrate and a hum can be heard.
3. Draw a diagram showing the outer, middle, and inner ear. Explain how we hear.
4. Discuss ways of caring for the ears.¹

Problem VII

How Has Our Community Been Made a Better Place in Which to Live?

1. How is our water supply kept pure?
2. How is our milk supply kept pure?
3. How are diseases kept from spreading?
4. How can we prevent accidents?

Suggested Activities

1. Demonstrate with an atomizer the spread of cold germs by coughing and sneezing.
2. Take a trip to study the city water supply.
3. Visit a dairy.
4. Interview the school nurse or a member of the county health board to see how diseases are kept from spreading.
5. Have a Courtesy Patrolman or Red Cross nurse speak to the group on prevention of accidents.
6. Demonstrate first aid treatment for cuts, bruises, burns, and fractures.²
7. Show how bacteria may be spread. Make a gelatine culture medium by mixing one-half package of gelatine with enough water to form a paste. To one cup of boiling water add the gelatine, one-half bouillon cube, and one-eighth teaspoon of soda. The soda is necessary for alkaline solution. Sterilize test tubes by boiling in water. Pour culture medium while hot into test tubes

¹See *Health Handbook for Teachers* for procedures for testing hearing. (Listed in "Bibliography for Teachers" at end of section.)

²*Health Handbook for Teachers* gives complete first aid information. (See "Bibliography for Teachers".)

and cork immediately with absorbent cotton stoppers. Slant test tubes so medium will cool at a slant. Sterilize test tubes and medium in oven for about half an hour. Keep one test tube unopened as a control. In others bacteria may be planted by the following methods: (a) run a pencil over medium; (b) leave one tube exposed to the air for several minutes; (c) touch a dirty finger to medium; (d) add several drops of raw milk. Seal tubes, label, and place in a dark warm place. After several days, compare the various cultures for bacterial growth. Discuss the importance of drinking pasteurized milk, washing hands before eating meals, and keeping pencils out of the mouth in relation to the results of the experiment.

GRADE SEVEN

Problem I

How Do Scientists Work?

1. How do scientists work?
2. What are some important scientific discoveries?

Suggested Activities

1. Select a problem that might be of interest to the class. Carry on a group discussion of solving the problem. Problems are solved by observation, experimentation, and good thinking.
2. Have the group make lists of problems in which they are interested. Have individuals tell the best way of solving each problem. (See problem-solving lesson for steps involved in solving problems, page 341.)
3. Have reports on important scientific discoveries as the telescope, law of gravity, airplane, steamboat, etc.

Problem II

How Are Living Things Able to Live in Their Environment?

1. How do animals get their food?
2. How are animals protected from their enemies?
3. How are plants and animals able to survive changes in climate?
4. How are plants able to make food?

Suggested Activities

1. Observe the feeding habits of common animals in the neighborhood.
2. Make picture charts showing the structures animals use in getting their food.
3. Make drawings showing the mouth parts of animals.
4. Make drawings or use pictures to show food chains. For example: A toad may eat a fly; a snake may eat the toad; etc.
5. Observe the structures of animals that are used in self-protection.
6. Collect pictures of animals showing structures that are used in protection.
7. Draw a diagram showing the structure of the parts of a plant involved in the process of making food (photosynthesis).
8. Observe the underside of a leaf under the microscope. Notice the stomata where carbon dioxide enters the leaf.
9. Dig up the root of a beet or a garden weed and wash off the soil very carefully. Observe the root hairs. By means of a drawing show the relationship between the roots, rootlets, and root hairs.
10. Show how water enters a plant through the root hairs. Obtain a medium size carrot having rootlets growing out of it. Cut off leaves and stem. With a sharp knife cut a cone-shaped hole about two inches deep in the top of the carrot. Fit a cork into the hole. Make a hole in the cork and put a glass tube about eighteen inches long into the hole so it will stick out through the bottom of the cork about one and a half inches. Fill the hole in the carrot with a sugar solution. Fill a jar with water and fit the carrot into it. The top of the jar should be small enough to hold the carrot firmly in place. In a few hours the glass tube will fill with water. The water in the jar will pass through the covering of the carrot, into the carrot, and up through the tube. In order for liquids to act in this manner, one must be thicker or denser than the other. The juice of the carrot is denser than water. (The sugar is added to make an even denser liquid, so the experi-

ment will work better.) Water passes from the soil into the root hairs in the same manner as it did in the experiment.

Problem III

How Is the Earth's Surface Being Changed?

1. How does wind change the surface of the earth?
2. How does water change the earth's surface?
3. How do freezing and thawing change the surface of the earth?
4. How do glaciers affect the earth's surface?
5. How may erosion be prevented?
6. How can floods be controlled?
7. Why is irrigation important to us living in Colorado?

Suggested Activities

1. Prove that rapid heating and cooling of rock causes it to break. Slowly heat a piece of rock until it is very hot. With a pair of tongs remove it from the fire and drop it into a pan of cold water. Pieces of rock will break off.
2. Show how acid helps dissolve rock material. Put some crushed limestone into a glass jar of distilled water. Pour a small amount of diluted hydrochloric acid into the jar. The acid will dissolve some of the limestone. Underground caverns have been made in this manner.
3. Take a trip into the community and observe evidences of erosion.
4. Take a trip to a nearby stream and observe how water has worn the rocks smooth.
5. Get some muddy water and examine a drop of it under the microscope. Notice the small particles of rock.
6. Observe how rivers wear away soil to make valleys.
7. Make diagrams to show the differences between valleys formed by glaciers and those formed by water.
8. Collect pictures showing river, wind, and glacial erosion.
9. On a world map show the regions of volcanic activity.
10. Draw a cross section diagram of a volcano.
11. Draw a diagram showing a cross section of a mountain range formed by folding.

12. From clay make models to show dikes, sills, a cross section of a volcano, a fault, and mountains formed by folding.
13. Interview a geologist on the formation of the Rocky Mountains; a farmer on irrigation.

Problem IV

How Do Heat and Cold Affect Solids, Liquids, and Gases?

1. How does heat affect solids?
2. How are liquids affected by cooling and heating?
3. How do heat and cold affect gases?

Suggested Activities

1. Show the boiling point of water. Fill a pan half full of water. Suspend a thermometer in the water. Record the temperature at intervals. When the water boils note the temperature. No matter how long the water is boiled the temperature will remain at that point.
2. Show the freezing point of water. Fill a pan with ice. Place a test tube half full of water into the ice. Put a thermometer into the water in the test tube. Record the temperature. Add salt to the ice. Record the temperature of the water. When the water has frozen note that the temperature remains the same no matter how much more salt is added to the ice.
3. Show that heat speeds up the rate of evaporation. Dip a plate in cold water. Dip another plate into very hot water. The plate dipped in the hot water will dry much more quickly.¹
4. Show that steam may be changed back into a liquid by cooling it. This is done by the process of distillation. When the water begins to boil, note that the steam goes up through the glass tube down into the test tube. When it reaches the test tube, which has been placed in a glass of cracked ice, the steam changes back into drops of water. Heat causes liquids to evaporate; cold causes water vapor (gas) to condense.

¹A discussion of how the temperature of the body is controlled may take place at this point.

5. By means of diagrams show that the molecules in solid materials are closer together than those in liquids. The molecules in liquids are closer together than those in gaseous materials.
6. By means of diagrams show what happens to the molecules when water evaporates.
7. Show that different liquids evaporate at different rates. Fill glass jars half full of water, oil, and alcohol. Mark the level of the liquid on each jar. Keep a record and note which liquids evaporate most quickly.

Problem V

Why Is Air Important to Us?

1. How do we make air work for us?
2. What do we mean by good and bad air?
3. How can we keep our homes and school rooms well-ventilated?

Suggested Activities

1. Prove that air has weight. Secure a flask with a rubber stopper, into which a glass tube with a valve has been put. Weigh the flask, tube, and valve. Pump as much air as possible out of the flask. Close the valve and weigh it again. When the air was removed from the flask, it weighed less.
2. After the flask has been weighed the second time, put the end of the glass tube in the water. Upon opening the valve, the flask will fill with water, proving that air was removed from the flask.
3. Obtain a fountain pen. Fill it with ink. The pen fills because the ink takes the place of the air which has been squeezed from it.
4. Get a vacuum cleaner and explain how it works.
5. Show how compressed air works. Take a piece of glass tubing about eighteen inches long. Heat the tubing in the middle and slowly pull it apart. As the glass becomes hot, it will become soft and can be drawn into a fine thread by slowly pulling on either end of the glass tube. When it has been drawn to a fine thread, let the glass tubing cool and break off the tip of one

of the pieces so there will be a tiny hole at that end. (The other piece of tubing is not used in the experiment.) Insert the tube, from which the tip has been broken off, into a rubber stopper and fit it into a bottle filled one-third full of water. Have the larger end of the glass tube in the water. Blow into the tube. As you take your mouth away, water will flow out of the tube, causing a fountain. As air was blown into the tube and through the water it caused the air to be crowded into the space above the water. When you stopped blowing the air above the water expanded immediately and pushed the water up into the glass tube making a fountain.

6. Demonstrate how a water pump works by means of air pressure.
7. Show by diagrams how caissons are used to build great bridges and tunnels under water.
8. Show how compressed air is used in welding machines, bicycle tires, etc.
9. Grow mold on a piece of damp bread to show that spores of mold are found in the air. (See page 301.)
10. Grow bacteria to show that bacteria are found in the air. (See page 316 for directions.)
11. Find out how your school building is ventilated.
12. Visit a store or a theater in the community that has air-conditioning and see how it works.

Problem VI

How Does My Body Function?

1. How is food digested?
2. How are food and oxygen carried to all parts of the body?
3. How does oxygen get into the body?
4. How are waste materials eliminated from the body?
5. How do our nerves work?

Suggested Activities

1. Chew a bite of bread until it is completely mixed with saliva. Note the sweet taste of the bread. Observe the time it took to thoroughly mix the bread with saliva.

2. In a large glass of warm water dissolve about a half teaspoonful of concentrated hydrochloric acid and several pinches of dry pepsin. Finely chop a teaspoonful of the white of a hard-boiled egg or cooked lean meat. Put it into the solution. Note the effect of the hydrochloric acid and pepsin (gastric juice) on the protein.
3. First aid teaching is the natural approach for the study of the circulatory and respiratory systems. Demonstrate first aid treatment of cuts, abrasions, lacerations, fractures, dislocations, burns, bleeding, shock, fainting, poisons, electrical shock, drowning, bites, sunstroke, frost bite, and foreign bodies in ears and eyes. Follow instructions in Scout manuals or Red Cross textbooks. One row of pupils may act as patients and the next row may administer first aid, or slips may be prepared with various types of injuries on them. Have pupils draw slips and carry out necessary treatment.¹
4. Pupils may make a first aid cabinet and secure the necessary supplies.
5. Discuss the necessity of knowing about the circulatory and respiratory systems before certain first aid treatments can be given.
6. Draw diagrams of the circulatory and respiratory systems.

Problem VII

How Do Living Things Depend on Each Other?

1. How do animals and plants help each other?
2. How do animals and plants harm each other?
3. How is the balance of life maintained in nature?

Suggested Activities

1. Make charts showing various plants and animals that help each other such as the bee and clover, bacteria and alfalfa, etc.
2. Prepare picture charts showing various food chains among animals and plants. For example: an earthworm may eat tiny animals and plants in the soil; a robin may eat the worm; a cat may eat the robin; etc.
3. Make a list of insects that are harmful to Colorado crops.

¹See *Health Handbook for Teachers* for first aid information. ("Bibliography for Teachers".)

4. Make a diagram showing the food cycle.
5. Interview a farmer about crop rotation.
6. Set up a balanced aquarium and terrarium.

GRADE EIGHT

Problem I

How Does Our Earth Fit Into the Universe?

1. What is our solar system like?
2. What are the stars?
3. How does the sun affect us?
4. How does the moon affect conditions on the earth?
5. How do the earth's movements affect us?

Suggested Activities

1. Show that the movement of the earth affects the position of the stars. Place a camera on the ground with the lens tilted toward the sky. Be sure there are no electric lights shining nearby or that there is no moon. Open the shutter of the camera and leave it for several hours. Then close the shutter and remove the film. Upon developing it you should have star trails.
2. With the help of a star map locate several first magnitude stars and constellations. Record their position in the sky at eight o'clock, nine o'clock, and ten o'clock. Vega and Arcturus should be noted. Locate Cassiopeia, the Pleiades, and Pegasus.
3. Give reports on some of the famous astronomers as Galileo, Capernicus, and Newton.
4. See page 295, demonstrating the cause of seasons.
5. Make a map of the United States, showing the time zones.
6. Show how the angle of the sun's rays affects the amount of heat the earth receives. Fill two boxes, about 1"x8"x12" in size, with dirt. Lay a thermometer in each box. Place one box on the window ledge in a horizontal position. Place the other box at a forty-five degree angle. Leave them in the sunlight for about fifteen minutes. Record the temperatures of both thermometers.

7. Draw diagrams showing how the moon and sun cause tides on the earth.
8. Watch the newspapers for news items related to this problem, such as eclipses, appearances of comets, northern lights, sun spots, etc.
9. Make reports on some of the famous comets as Morehouse's, Halley's, Encke's, including discovery, appearance, composition, and relation to the sun and earth.

Problem II

How Has Colorado Changed Through the Ages?

1. What was Colorado like before living things appeared on the earth?
2. How were the Rocky Mountains formed?
3. How do we know how life developed on our earth?
4. How do rocks tell us about early man?

Suggested Activities

1. How to make a Geologic Time Clock. From a large piece of tagboard cut a disk about two feet in diameter. Divide the disk into the twelve hours found on the face of a clock. Use Roman numerals to indicate the hours on the face of the clock. Since some scientists estimate the age of the earth to be about 3,000 million years, let each hour represent about 250 million years. The following divisions may be placed on the disk: the gaseous state of the earth—about 400 million years; the formation of the earth—about 600 million; Archeozoic period—1,000 million years; Proterozoic—500 million years; Paleozoic—300 million years; Mesozoic—160 million years; Cenozoic—40 million years, of which man has been on the earth for about the *last minute of the hour*. Cord may be used to lead from the various divisions to appropriate pictures for that period of the earth's history.
2. Secure pictures of early man.
3. Draw a diagram showing a cross-section of the layers of rock found in your community such as a canyon wall, bank of a river, a hill exposed, etc.
4. Make a collection of different fossils found in your locality. These may form the nucleus of a school museum.

5. Draw diagrams showing the various theories regarding the origin of the earth.

Problem III

Why Does the Weather Change?

1. How does the temperature of the air affect the weather?
2. How does the amount of moisture in the air affect the weather?
3. How are storms caused?
4. How does the Weather Bureau predict the weather?
5. How does the weather affect us?

Suggested Activities

1. Keep a record of the weather for a week. Observe the relationships between temperature, amount of moisture in the air, and wind.
2. Prove that warm air rises.
 - a. Take the temperature of the air near the floor. Then take the temperature near the ceiling. Note the difference.
 - b. Secure two paper sacks the same size. Fasten the sacks by the bottoms to each end of a yard stick. Tie the yardstick to a ring stand so that the two paper sacks balance each other. Take a lighted candle and hold it close to the opening of one of the sacks. When the air inside the sack gets warm, the sack will rise.
3. Make a mercury barometer. (See page 304.)
4. Determine the dew point of the air in a room. Take a jar of water. Put a thermometer in the water and add small pieces of ice to the water until drops of moisture appear on the outside of the jar. Note the temperature. That temperature is the dew point.
5. How to make a wet-bulb thermometer. Suspend two thermometers from a yardstick which has been placed between two piles of books. Around the end of one suspended thermometer tie a piece of cloth. Record the temperatures of both thermometers. Moisten the cloth around the one thermometer. Record the temperature after several minutes. Then fan the "wet" thermometer

with a piece of paper. Watch the temperature as it changes. Record the temperature when it no longer drops. Note the difference between the readings of the wet-bulb and dry-bulb thermometers. From a table on relative humidity (found in most high school science books) determine the relative humidity of your school room.

6. Make a collection of weather signs and superstitions. Determine those that have scientific basis and why.
7. Visit the weather station in your locality to see the instruments used in recording weather conditions.
8. Study weather maps. Note high and low pressure areas, symbols, isotherms, millibars, movement of storms, etc.
9. Collect newspaper clippings of severe storms, noting how they affect communication, transportation, destroy property, etc.

Problem IV

How Have We Used Natural Forces to Improve Our Ways of Living?

1. How does man control forces with simple machines?
2. How are magnetism and electricity used to make work easier?
3. How do we use light?

Suggested Activities

1. Show by means of diagrams how an airplane is supported in the air.
2. Make models of airplanes and demonstrate how they fly.
3. Demonstrate how a lift pump operates.
4. Show how a camera takes pictures.
5. Demonstrate the way in which a dynamo works.
6. Show how electricity makes light.
7. Visit a factory, garage, etc., in the community where machines are in operation. Find out how the machines work.
8. Find out where the electricity which you use in your home community is generated, how it is generated, and how it is transmitted to your home.

9. Examine toasters, irons, and other electrical household apparatus and find out how they work.
10. Learn how to read an electric meter.
11. Learn how to fix iron cords, etc., that are not safe to use because of the insulation being torn or wires broken.
12. Discuss the operation of the telegraph and telephone.

Problem V

How Should I Care for My Body?

1. What kinds of foods are needed by my body?
2. How do medicines and drugs affect the health of my body?
3. How do alcohol and tobacco affect the health of my body?¹
4. How should I care for my teeth, feet, skin, eyes, and ears?
5. How can I avoid getting contagious diseases?
6. How may I improve my personal appearance?
7. How shall I judge the advertising of foods and clothes?

Suggested Activities

1. Secure a light meter and measure the light on each desk under varying conditions. (Local power companies usually will lend a meter for such use.)
2. Determine the proper way to light a school room and write a recommendation for use by school officials.
3. Collect advertisements of patent medicines that claim to aid digestion. Discuss the claims and ask a doctor or nurse about these claims.
4. Study food labels to see the effect of the Pure Food Law.
5. Make posters illustrating wholesome foods, best sources for each vitamin, a well balanced meal, etc.
6. Secure a human tooth from a dentist and put it into enough hydrochloric acid to cover it completely. The bubbles which escape indicate the destruction of the tooth. After a few days note the destruction and change in the tooth. Food allowed to remain around the teeth becomes acid in reaction and thus is a constant danger to healthy teeth.

¹See *Supplement to the Colorado State Course of Study for Elementary Schools* published by the Colorado State Library, Room 320, Capitol Building, Denver, for sources of units dealing with this question.

7. List all the desirable and undesirable character and personality traits in two columns. Have each child make a self-improvement chart containing this list of traits. Each day have each child recall the past day's activities and place a mark after the trait they exemplify. See if the good can outnumber the bad.
8. Set up fictitious situations and have pupils give what they think would be the best action to follow.
9. Pupils may write out all the personality traits they dislike in persons of their age. If they themselves have any such traits they may make plans for overcoming them.
10. Pupils may write out all the desirable personality traits which they admire in their friends. They should attempt to cultivate any of these they do not possess themselves.
11. Write to the Division of Public Health Nursing, State Division of Public Health, State Office Building, Denver, for bulletins on communicable diseases.
12. Make a map of the community, using different colors to indicate location of unsanitary toilets, unprotected wells, and unsafe water.
13. Make a chart of the common diseases, listing their causes, symptoms, prevention, and cure.¹
14. Find and report, or demonstrate to the class, experiments that have been conducted regarding the effects of stimulants and narcotics.
15. List the narcotics and stimulants. For each one study and make a report upon (a) source; (b) harmful elements; (c) effects upon the individual; (d) effects upon society; and (e) problems connected with it.
16. Find out from some habitual smoker the number of cigarettes he uses each week and compute the cost for one year.
17. Gather statistics regarding the amount of money spent annually on tobacco, alcohol, and drugs and compare with the amount spent on public health.
18. Make a list of the proper uses of alcohol, including use as rub down, as an antiseptic, and as a solvent, and compare with the harmful uses.

¹See *Health Handbook for Teachers* for information on communicable diseases. ("Bibliography for Teachers".)

Problem VI

Why Must We Conserve Our Natural Resources?

1. How can we save our soil?
2. How can we conserve water?
3. Why must we protect our animal and plant life?
4. Why must we conserve our mineral resources?

Suggested Activities

1. Gather information and pictures showing the effects of water in areas where vegetation has been destroyed. Discuss the importance of plant conservation and flood control with reference to conservation of water resources.
2. Take a trip into the community to find evidences of soil erosion.
3. Find out from your county authorities what has been done to save the soil in your county, conserve water, and protect animal and plant life.
4. Compare the water which has run off the bare school ground with that which has run off a lawn or grass plot during a storm or when a hose is turned on it. Discuss the effect of roots in holding soil and preventing wind and water erosion.
5. Write to the State Game and Fish Commission, Denver, to find out how our state is protecting animal life.
6. On a map of Colorado indicate game preserves, fish hatcheries, national and state parks, and bird refuges.
7. Find out how our mineral resources are being conserved.

Problem VII

How Do We Care for the Plants and Animals We Use?

1. How do farmers in Colorado improve their soil?
2. How do we protect plants and animals from their natural enemies?

Suggested Activities

1. Invite the county agent or a local farmer to discuss farming problems.
2. Visit a farm in the spring and inquire how that farmer improves his soil.

3. Collect diseased or pest-infested plants found in the community. Find out how insects and plant diseases are controlled.
4. Show the effect of different soils on plants. Fill one can or flower pot with each of the following: rock, sand, good garden soil, sand and commercial fertilizer, soil and commercial fertilizer, soil with table salt, sand with table salt. Plant corn, beans, and wheat in each can. Keep records of plant growth. Compare results.
5. Interview local people about any experiments in plant improvement being carried on in the community. Observe the process and results if possible.
6. Select a section of the school lawn containing weeds and experiment with control methods.
7. Interview a veterinarian to find out what animal diseases are common in the community and how they are treated.
8. Find out what weeds are pests in your locality. Find out how these weeds may be eradicated.

Problem VIII

How Do Living Things Reproduce?

1. How do plants reproduce?
2. How do animals reproduce?

Suggested Activities

1. Look at some simple one-celled animals such as an amoeba or paramecium under the microscope. To obtain these animals get a handful of straw or hay, put it in water, and let the infusion stand for several days in the sunlight. Put several drops of this water under the microscope.
2. Grow bacteria. (See page 316.) Examine a small amount under the microscope. Note whether any of the bacteria are dividing. Bacteria reproduce by fission.
3. Grow yeast plants. Put a small piece of a cake of yeast into warm water and add a small amount of sugar to the water. Observe several drops under the microscope. Yeast reproduce by budding.
4. Grow bread mold. (See page 301.) Examine under a microscope or magnifying glass. Note the spore cases and spores. Molds reproduce by spores.

5. Show how some plants reproduce from parts of plants. Plant a piece of potato that has an "eye" or bud on it; a slip of a geranium; several begonia leaves.
6. By means of drawings show how flowers produce seeds.
7. Incubate about fifteen eggs that have been fertilized. After several days break one of the eggs into a very weak solution of warm salt water. Note the spot where the body of the chicken has started to develop. See whether the heart is beating. Make drawings of what you've seen. Every three days open another egg. Make observations and drawings. Note the stages of development.
8. Observe the development of frog eggs.

EVALUATING THE PUPIL'S WORK

Evaluating the pupil's work in terms of the objectives set forth for the teaching of science is rather difficult, however, some of the following suggestions may be helpful.

In the primary grades the children's work may be evaluated in terms of their ability to take part in summarizing activities such as (1) making a science booklet bringing together all the important findings on a problem; (2) making a series of drawings to illustrate their findings; (3) giving short talks to another grade explaining important concepts developed during the study of the problem.

In the intermediate grades and junior high school objective tests have some value in determining the degree to which children have learned science concepts and principles. It is much more important, however, that teachers devise techniques that will evaluate the growth children have made in scientific attitudes and in the ability to use the problem-solving method.

Several techniques which may be used are: (1) an anecdotal record for each individual; (2) essay-type question test; (3) tests that attempt to measure the pupil's abilities in discovering and defining problems, gathering data, forming conclusions, etc.

In the anecdotal record for each child, the teacher briefly states the behavior characteristics of the pupil in various types of learning situations as class discussion, observations, experimentation, field trips, etc. Note particularly his ability to discover and define problems, to draw conclusions, etc.

The essay-type test may prove quite valuable in evaluating the pupil's ability to apply scientific principles and concepts learned in class to situations in his environment. The following question illustrates the type of question which may be asked: "Why is a warm, dry, windy day good for drying your mother's clothes?"

The following tests illustrate a technique which may be used in junior high school and which help determine the extent to which children have grown in scientific attitudes, the ability to state problems, and to select information pertinent to problems.

- I. Check the attitudes which you believe to be good thinking.
 1. I should be careful and accurate in the observations I make.
 2. I must find out what a question asks before I try to answer it.
 3. I can always rely on what I read in the newspaper.
 4. Everything that happens has a reason for happening.
 5. I shall believe what other people say.
 6. I do not believe in superstitions.
- II. For the past few weeks our community has had a great deal of snow. Many children have come to school without wearing coats and overshoes. We are now having an epidemic of colds. Some children have wondered why there is an epidemic of colds in our school. State the problem which the above paragraph raises. (The problem might be "How do we get colds?")
- III. Check, in the list of statements below, those facts you would use in solving the problem stated in Number II.
 1. Children catch cold only in the wintertime.
 2. Colds are caused by germs.
 3. Children must wear proper clothing when it is cold.
 4. Colds are often spread by coughing and sneezing without covering the mouth.
 5. Colds may be caught from the bites of insects.From the information you have checked above, write a summary paragraph on this problem.

Various techniques may be used to determine the skill with which children use the library, reference books, the index and

glossary of a book, the dictionary, etc. For example, questions as the following may illustrate one type of evaluation:

1. Where would you find out how to pronounce the word, "atmosphere"?
2. What part of a book would you use to find the meaning of a word?
3. How would you get information on a problem you were solving?
4. Make a list of the names of books that would help you solve a problem.

Much of the evaluation of growth in scientific concepts, attitudes, and problem solving abilities cannot be objectively measured. The teacher who observes the daily reactions of his pupils in the classroom and in those less formal situations on the playground, during the lunch hour, etc., will gather many impressions as to their level of development in application of scientific principles to the problems of everyday living.

SUGGESTED ADAPTATIONS FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

In rural schools where there is usually one teacher, teaching all grades, it is suggested that children in the primary grades be grouped together and study problems in each of the major science areas. They might study suggested problems in grade one, the first year, problems in grade two the next, etc. Children should be allowed to initiate approaches to the various problems in keeping with their needs and interests.

In the upper grades the boys and girls may form a group and study problems of common interest. If they have had very little science, the group might begin with problems suggested in grade four. Individuals in the group will solve problems in accordance with their ability, interests, and needs.

SPECIAL HELPS IN TEACHING SCIENCE AND HEALTH

How to Make an Aquarium

Almost any container that holds water may be used; however, one with straight sides is best.

Be sure that the container is clean and the sand thoroughly washed. Enough sand should be put into the bottom of the

aquarium so the plants will take root. Among the common plants that may be found in most fresh water lakes and streams are elodea, water-milfoil, and eel-grass. Plant the plants in the sand and anchor them with stones. Pour the water on a piece of paper which has been placed on the sand. This procedure will not disturb the plants.

Use clean pond, lake, or rain water if possible as they contain organisms that may be used as food for the fish, snails, etc. If tap water is used, let it stand several days before putting it into the aquarium, so the lime in the water may be deposited. After the plants have become rooted, put fish, snails, tadpoles, etc., in the aquarium. Allow about a gallon of water for each three-inch fish. Snails and tadpoles act as scavengers. Do not over-feed fish.

In a balanced aquarium the plants and animals will look healthy. The water will be clear.

How to Make a Terrarium

Any glass container large enough for the inhabitants may be used; however, a glass box may be made very easily. Get six pieces of glass cut to the desired size (19"x15" for the bottom is a good size). Fasten these pieces together with passe partout tape or white adhesive tape. Be sure to bind all edges with tape to prevent cutting of fingers. The top piece of glass may be hinged with the tape or just laid across the top.

After the container is made, put a layer of gravel in the bottom for drainage. Small pieces of charcoal may be added to keep the terrarium sweet. On top of the gravel put the kind of dirt you find where you get the plants you are going to use in the terrarium. For example, for a garden terrarium, you will get garden soil, for a desert terrarium you will use sand, etc.

When putting animals into a terrarium, include plants which may be used as food by the animals. For example, if you were going to put a toad in a terrarium use garden soil for the toad to bury itself in, a dish of water sunk into the dirt, and grass; for salamanders put in several pieces of decaying wood and moist moss; for lizards and horned toads plant cacti in the sand.

Keep water in the terrarium for the animals—a low dish for turtles and toads, a pint jar for snakes.

Have children find out feeding habits of animals put in the terrarium. The children should learn to care for them.

Frogs and toads eat caterpillars, insects (flies and gnats), worms, and snails. The food must be alive as they will not eat dead insects or caterpillars.

Salamanders will eat bits of raw meat, scrambled eggs, insects or worms. Turtles that live on land will eat tender plants. Water turtles use earthworms, insects, and crayfish as food. Horned toads must have living insects. Snails may be fed lettuce. The diet of garter snakes includes frogs, toads, insects, and salamanders.

Caring for Caterpillars

When children bring in caterpillars emphasize the fact that they must be sure to bring some of the leaves of the plant on which they find them as the larvae may not be ready to pupate. It will also help to find out what food they need to be fed. When caterpillars are ready to pupate they will leave the food provided for them and hunt a suitable place to spin cocoons.

If the caterpillar of the tomato sphinx is brought in, put it in a fruit jar with garden dirt as it goes into the ground to pupate. Some Woolly Bear caterpillars hibernate in the larva stage under dead leaves and bark so put them in a terrarium, as they will spin in the spring. Other Woolly Bear caterpillars spin a cocoon in the fall. If caterpillars of the Monarch butterfly are brought in, put milkweed leaves and several stems of the plant in the jar. They will make a chrysalid.

The pupae of these insects should be kept in a cool place, not too damp or too dry.

Suggestions for Equipment

Elaborate equipment for teaching science is not necessary. Any ordinary classroom may be adapted to the needs of a science class. Much of the equipment may be made by the teacher and children. There should be a closet or cupboard in which to store equipment. Shelves for books and plants may be built under windows.

There should be some source of heat for doing experiments—an electric plate, alcohol lamp, or a bunsen burner.

If test tubes, flasks, and beakers cannot be obtained, jars

and bottles of various sizes may be used for many experiments. Coffee cans are also useful.

When working out problems in electricity and magnetism, dry cells, insulated copper wire, and magnets will be needed as well as old fuses, sockets, and switches. The children may collect these materials from their homes if the school does not have the equipment.

Cages for small animals may easily be constructed from wire netting and crates.

If no file is available for pictures, pamphlets, and other bulletin board materials, one may be made from an orange crate.

Equipping the science room offers opportunities for a variety of learning experiences for the children.

Planning Field Trips

When trips are taken into the community the teacher should make the trip herself before taking the children. Every child should know what he is going to look for on the trip.

If collections are to be made on the trip, containers should be taken for carrying the specimens back to the classroom. Collect materials only if they are to be used in the schoolroom as a learning activity.

Children should have a part in planning the field trip and setting up rules to be observed. They take pride in following rules they have helped make.

Procedure for Doing an Experiment

An experiment is done for the purpose of helping to solve a problem. Therefore, the teacher must be sure that the children know what their problem is. Next they must analyze their problem. This may be done by the teacher asking questions of the children. They may suggest the various materials needed for doing the experiment.

These materials will then be collected and the children should suggest the things they think are going to happen when they do the experiment.

The children must learn to observe carefully and report exactly what happened. By having several groups working on the same experiment the children can check results with each other.

Safety should be foremost in the mind of the teacher in planning experiments. Experiments involving much danger should not be used.

Before doing an experiment that may involve any danger, the group should discuss and know what to do in case of an accident; however, very few accidents happen. A first aid kit should be at hand. This may be used as a means of teaching first aid.

Common dangers in doing experiments may be due to the careless handling of hot liquids, fire, acids, and glassware.

When using acids hold the cork of the bottle between the fingers and replace in the bottle immediately. Be careful not to touch clothing or skin with the end of the cork that has been in the bottle. Vinegar and soda, harmless substances, may be substituted for hydrochloric acid and calcium carbonate, as some school systems have rules against the use of chemicals in a classroom.

Visual Aids¹

Whenever possible pictures and films should be used to help teach concepts. The Colorado State Library has prepared a supplement to this Course of Study which contains lists of textbooks, free and inexpensive materials, and films. The teacher and pupils may collect and file pictures for school use.

Manuals accompanying series of textbooks will be found very useful to the teacher. These may be obtained at a small cost.

Suggestions for Working Out a Problem

Grade One

Problem: How Can We Find Out About Air?

Major Sub-Problems and Questions

1. How do we know there is air around us?
2. Why do things need air to burn?
3. What happens when air moves?
4. How does water go into the air?

Children's Sub-Problems and Questions

After the problem has been motivated or has originated

¹*Health Handbook for Teachers* lists many films and other visual aids for teaching health. ("Bibliography for Teachers".)

through some happening in the community or a child's experience, make a list of children's sub-problems and questions. Organize them under the four questions listed above or some other convenient manner for solving.

Solution of Problems

Activities

1. Discussion stimulated by such questions as, "How do we know there is air in this room? Can we see it? Can we feel it? Can we see wind move? Have you ever watched your mother start a fire in the stove? Perhaps the fire would not burn. Do you know why? Where does water go when we wash the blackboard?"
2. Experiments and demonstrations
 - a. Show that fire needs air to burn.
 - (1) Place a glass jar over a lighted candle. Why did the candle go out? In children's language the candle went out as soon as the fresh air was used.
 - (2) Light the candle again. This time when the candle is almost out, pull up the jar. Why did the candle keep on burning? Why didn't it go out as before?
 - b. Show that heat causes water to go into the air.
 - (1) Boil a small amount of water. Let a child measure the level of the water frequently to see that the water is disappearing in the pan. Where is the water going? What makes the water go into the air?
 - (2) Fill a glass nearly full of water. Mark the water level. Let the glass stand in the window where the sunlight will reach it. Observe evaporation of water. Where did the water go? What caused the water to go into the air?
 - (3) Put pans of water, same amount in each pan, in different places to show the rate of evaporation. Place one pan in the room with a cover on it, one in the room without a cover, one outside in the sun, one outside in the shade, one in a cool place in the room. Observe the water level in the pans from time to time. Ask questions such as "Why

does this pan with the cover on have more water in it than this one without a cover? Why does the pan that was in the sunshine have less water than the one in the shade? What caused the water to go into the air?"

- c. Show what happens when air moves.
 - (1) Tell children to fan themselves to note movement of air.
 - (2) Blow pieces of paper into the air.
 - (3) Make paper pinwheels. Take them outside and run with them. "What made the pinwheels turn around when you ran?"
 - (4) Drop a feather in warm air over a radiator or stove. "What carried the feather upward?"

3. Visual aids

- a. Pictures of children flying kites, leaves being carried by the wind, trees in motion to show what happens when air moves.
- b. Pictures of clouds to show that clouds are formed when a large amount of water goes into the air.
- c. Pictures of fires. Teach children to be careful of fire and not to play with matches.

4. Trips

- a. Take an excursion through the neighborhood after a hard wind storm to note its effects.
- b. Take a trip to a farm to see how the wind causes the windmill to turn.

5. Reading

Read books, charts, and magazines on the child's level to find the solution to problems.

6. Interviewing authorities

The children may invite some one from the local fire department to come and talk to them on safety with fire.

Conclusions and Summaries

The children concluded that air is all around us; that air is needed for burning; that they must not play with fire; that air makes things move; and that heat causes water to go into the air.

Integrate with language, social studies, art, etc., whenever possible.

How to Carry on a Problem-Solving Lesson

Problem: How Does Water Go Into the Air?

Analysis: Teacher's Question

Last night Jimmy helped wash the blackboard. Where did the water go when he washed the blackboard?

Children's Answers: (1) It just dried up. (2) It went into the blackboard. (3) It went into the air.

Hypotheses

- (1) Perhaps it went into the air.
- (2) Maybe it went into the blackboard.

Solution of Problem

Carry on a discussion of the observations and past experiences of the children. One child may suggest that when his mother hung clothes on the line they got dry. Another child may suggest that when he came to school with his shoes wet, they dried off.

The children then might watch water boiling, hang a wet cloth to dry, or carry out experiments suggested on pages 339 and 340. After these experiments the teacher might ask, "Have you ever noticed what happens to the water on the street or sidewalk after a rain?"

The results of the experiments would show that the pan of water was almost empty after boiling, that the pan in the sunlight did not contain as much water as the children had put in, and that the cloth was dry.

Conclusion

The children decide that heat causes water to go into the air.

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ARITHMETIC IN THE ELEMENTARY SCHOOL

WHY ARITHMETIC SHOULD BE TAUGHT

The importance of the understanding of number in modern life cannot be overestimated. Situations which involve number are met in almost every phase of daily living. It is the responsibility of the elementary school to provide experiences for developing quantitative thinking so that the child can meet life situations.

In recent years there has been a decidedly more liberal interpretation of the functions of arithmetic. The major objective of past arithmetic instruction has been skill in computation. It is realized that computation is an important function of arithmetic; however, if understanding of life situations is to be the criterion, computation is of no more importance than the informational, psychological, and sociological functions. If the pupil is to understand life situations involving number a functional arithmetic program must be meaningful. It must involve all the functions in proper relationships. Today the main purpose of arithmetic is to help the child to understand and to adjust himself to his environment. This understanding cannot be gained in an arithmetic program which stresses only computation and ignores the informational, psychological, and sociological functions of number.

The course of study in arithmetic as here presented has purposely been labeled, "The Suggested Content". Because a topic is listed in a given grade does not necessarily mean that in all instances this is the proper time for introduction or completion. Neither is it the intention that the suggested content should cause the teacher to feel that arithmetic should be broken into separate compartments. For example, it is not necessary that complete mastery of one fundamental be obtained before progressing to the next. It is felt that the teacher must assume responsibility for adaptation of the content to meet the needs and the understanding of the individuals in the group. *Teachers should use the suggested content as a guide only.*

It is essential for intelligent work that clear number concepts be developed from the very beginning. Investigations

show that many of the difficulties of intermediate and upper grade children can be traced to the lack of basic concept development. One of the major tendencies today is to place much emphasis at the start in building number concepts. Since out of school number experiences are incidental, growing out of everyday happenings of the child, it seems reasonable to utilize these experiences in classroom work. There should be, however, a definitely planned program for developing number understandings.

The revised arithmetic course has attempted to incorporate the most worthwhile of the recent trends in arithmetic thought. The placement of topics and types of difficulties was determined by a study of leading research, recently copyrighted textbooks, and suggestions made by consultants. It will be noticed that the content in general has been simplified with emphasis on meaning and understanding. Some topics have been stepped up to a higher grade level or completed in the next grade. Facts needed in the development of the fundamental processes have been included at the time of presentation in order that the teacher have access to complete lists. It is hoped that the teacher will find the teacher helps and activities useful in carrying on an interesting and varied arithmetic program.

For arithmetic to be meaningful to children introduction of a process must be made at a time when the child has need for it. Readiness performs the same function in arithmetic as in reading and should apply throughout the child's entire arithmetic experience. Investigations indicate that many number processes are taught before the child has sufficient maturity to understand their meaning. Understanding and meaning will be accomplished if the child is taught what he needs, when he needs it. These same investigations tend to prove that in children's mental growth there is a time when it is best to teach an arithmetic topic. Should the topic be taught prior to this time, the teaching will most likely be ineffective, but if it is taught at or after this time most children can learn it with reasonable success.

It seems advisable to call attention to the fact that most all the new arithmetic textbooks have revised their placement of topics to meet the findings of recent research. Probably no text will coincide exactly with the suggested content given in this course but the resourceful teacher can make needed adapta-

tions with little difficulty. Teachers should use textbooks and workbooks, when necessary, as well as the course of study to meet the needs of the children rather than follow exactly prescribed content.

Some of the major objectives to be attained in the study of arithmetic are:

1. To help the child to understand and to adjust to his environment through the ability to do quantitative thinking
2. To develop a knowledge of quantitative terms and quantitative relationships
3. To make known the significance and the function of number and quantity in the activities of daily life
4. To develop proficiency in performing computations with facility and accuracy
5. To develop an understanding of economic situations and their relation to social problems
6. To develop enjoyment in understanding and using arithmetic

HOW ARITHMETIC MIGHT FUNCTION IN OTHER ACTIVITIES

The learning experience of children would be difficult, indeed, were it not for an understanding of mathematical concepts. By way of illustration glance at a random page in any science, social studies, or reading textbook. An analysis will show that there are many number references which require arithmetical understanding. However, these are not the only subjects which require number comprehension. Art requires a sense of proportion; music, a concept of time; physical education, a knowledge of measurement; and so on for each of the separate fields of learning. The subject matter of arithmetic, with few exceptions, is related to all the other activities of the school.

Too often effective use has not been made of the many opportunities offered for number experiences in the normal day's activities. Teachers often think of arithmetic as a subject set apart from the other school activities and depend upon problems from the textbook as the only source of material. A meaningful

program will take advantage of every opportunity to correlate arithmetic with the other areas of learning.

Quantitative experiences are to be found in units of work designed chiefly for a given field. It would be a tremendous task to list all the units in which arithmetic might function. A study of the units in this course of study listed under social studies, science and health, art, and to a lesser extent music, physical education, and language arts sections will provide many suggestions as to how arithmetic might function in other activities.

A SUGGESTED PROGRAM BY GRADES GRADES ONE AND TWO

The objective of the program in arithmetic in grades one and two is to develop an understanding of and appreciation for number as it functions in the life of the child. It is an "experience" program in which the child works with number concepts in concrete settings.

Most authorities in the field of arithmetic agree that an "experience" program in arithmetic in the first two grades, if it is effectively carried out, results in more rapid and more meaningful learning in later grades. There are experimental studies which show that children under this type of program in grades one and two, do better work in the intermediate grades than those children in schools where the major emphasis in the first two grades is placed on memorization of number facts.

It should be understood that children do learn many number facts through the various number activities in which they engage. These facts are learned through use and repetition in meaningful situations. It should also be made clear that arithmetic is really taught through a carefully planned program.

The teacher who is accustomed to the more formal approach in arithmetic may be at a loss to know how to proceed with an "experience" program. The section entitled "Suggested Procedures and Other Aids for Teaching" contains many suggestions for providing many kinds of meaningful learning experiences.

"The Suggested Content" for grades one and two is not to be considered as so much subject matter to be covered, but as a guide to the teacher in providing well rounded experiences in

number for the children. Definite standards of achievement have not been set up. Children vary so greatly in mental ability, background of experience, physical health, and social and emotional adjustment that no single standard of accomplishment can be applied fairly to any group in any grade.

Suggested Content—Grade One

Numbers

1. Count numbers to meet needs in games and activities
2. Read and write numbers to meet needs in games and activities
3. Provide experiences in telling the number that comes before and after a given number
4. Use the ordinals first through fifth

Addition and Subtraction

The use of addition and subtraction of whole numbers in classroom experiences

Fractions

The use of one-half in classroom experiences

Measures

1. Money

- a. The use of penny, nickel, and dime in classroom experiences
- b. Provide opportunities for learning that a nickel is the same as 5 pennies; a dime the same as 10 pennies or 2 nickels

2. Time

- a. Provide experiences in telling by the clock, the hours used by the pupils
- b. Provide experiences in which the names of the days of the week and the months of the year are used
- c. Provide opportunities for the child to learn to tell his age and date of birth

3. Linear Measure

Use inch, foot, and yard in classroom activities

4. Liquid Measure

Use pint and quart in classroom activities

Suggested Content—Grade Two

Numbers

1. Provide experiences in reading and writing numbers to 100
2. Provide experiences in counting by 2's and 5's to 50, and by 10's to 100
3. Use numbers over 100 and under 1,000 in classroom activities
4. Introduce the concept that in numbers of two or more places each figure has a value ten times that of the figure to the right of it
5. Introduce the concept of zero used as a place-holder

Addition and Subtraction

1. Present the sixty-four simple addition facts whose sums are 10 and under¹

Direct Facts

1 1 1 1 1 1 1 1 1

1 2 3 4 5 6 7 8 9

— — — — — — — — —

2 2 2 2 2 2 2

2 3 4 5 6 7 8

— — — — — — —

3 3 3 3 3

3 4 5 6 7

— — — — —

4 4 4

4 5 6

— — —

5

5

—

Direct Zero Facts

0 0 0 0 0 0 0 0 0

0 1 2 3 4 5 6 7 8 9

— — — — — — — — —

Reverse Facts

2 3 4 5 6 7 8 9

1 1 1 1 1 1 1 1

— — — — — — — —

3 4 5 6 7 8

2 2 2 2 2 2

— — — — — —

4 5 6 7

3 3 3 3

— — — —

5 6

4 4

— —

Indirect Zero Facts

1 2 3 4 5 6 7 8 9

0 0 0 0 0 0 0 0 0

— — — — — — — — —

¹Presentation of addition and subtraction facts should be in mixed order. Both direct and indirect facts should be taught. Because a child knows 6 is no assurance that he knows 4.

$$\begin{array}{r} +6 \\ \hline \end{array}$$

$$\begin{array}{r} +4 \\ \hline \end{array}$$

It is not expected that most children will master these facts in the second grade. Drill on these facts should not be given until the child has developed a good understanding of the number concepts which they represent.

2. Present the sixty-four simple subtraction facts whose minuends are 10 and under

$$\begin{array}{r} 0\ 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9 \\ 0\ 0\ 0\ 0\ 0\ 0\ 0\ 0\ 0\ 0 \\ \hline \end{array}$$

$$\begin{array}{r} 5\ 6\ 7\ 8\ 9\ 10 \\ 5\ 5\ 5\ 5\ 5\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10 \\ 1\ 1\ 1\ 1\ 1\ 1\ 1\ 1\ 1\ 1 \\ \hline \end{array}$$

$$\begin{array}{r} 6\ 7\ 8\ 9\ 10 \\ 6\ 6\ 6\ 6\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10 \\ 2\ 2\ 2\ 2\ 2\ 2\ 2\ 2\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 7\ 8\ 9\ 10 \\ 7\ 7\ 7\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10 \\ 3\ 3\ 3\ 3\ 3\ 3\ 3\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 8\ 9\ 10 \\ 8\ 8\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 4\ 5\ 6\ 7\ 8\ 9\ 10 \\ 4\ 4\ 4\ 4\ 4\ 4\ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 9\ 10 \\ 9\ 9 \\ \hline \end{array}$$

Fractions

1. Use $\frac{1}{4}$ and $\frac{1}{3}$ of a unit in classroom activities
2. Use $\frac{1}{4}$ and $\frac{1}{3}$ of a group of units in classroom activities

Measures¹

1. Money

- a. Use quarter, half-dollar, and dollar in classroom activities
- b. Introduce the writing of one cent, five cents, ten cents, twenty-five cents and fifty cents with the cent sign, and one dollar with the dollar sign (\$1 not \$1.00)

2. Time

- a. Provide experiences in telling time to the hour and half-hour
- b. Provide experiences in reading the calendar—days of the week, and days of the month
- c. Develop the meaning of morning and afternoon

3. Linear Measure

Use mile and block in classroom activities

¹Measurement concepts should be developed in relation to the environment of the children.

4. Dry Measure

Use bushel in classroom activities

5. Liquid Measure

Use gallon, cup, half-cup, tablespoon and teaspoon in classroom activities

6. Weight

Use pound and hundred pound in classroom activities

7. Use dozen and half-dozen in classroom activities

Problem solving

Present simple experience problems in addition and subtraction involving combinations which have already been taught

**Suggested Procedures and Other Aids for Teaching
Grades One and Two**

The program in arithmetic in the first and second grades is concerned with developing readiness for arithmetic and introducing the child to the uses of numbers which arise in his daily living. Teaching procedures consist of providing experiences through which number concepts are developed in meaningful situations.

The home, school, and community environment provide many opportunities for the development of understanding of numbers and for their use. Advantage should be taken of these opportunities whenever the difficulty of the number concepts and use of the numbers involved is in keeping with the level of the development of the pupils. Classroom activities may be planned which call for the use of number. Such activities may or may not grow out of arithmetic. Some activities having their origin in social studies, reading, science, etc., are rich in possibilities for the use of number. Other activities may grow out of arithmetic and have as their primary purpose the teaching of number understandings. Many games which children enjoy playing may be used to motivate number learnings and provide opportunity for practice in number skills.

The Textbook

It is a debatable point as to whether an arithmetic text should be used in these grades. Many authors of arithmetic

series do not provide texts below the third grade. Others have only workbooks for grades one and two, while a few provide both texts and workbooks. The busy teacher will find a text or workbook or both a great help in carrying on the work of his group. If a text or workbook is provided it should be of the type which places major emphasis on developing number concepts, rather than the learning of number combinations through drill.

The Arithmetic Period

Here again we find a wide difference of opinion. Some feel that there is no need for a definite period in arithmetic at this level if full advantage is taken of the opportunities for teaching number ideas as the need for them arises in other activities. Others recommend a definite period for arithmetic teaching. Most teachers will probably find it advantageous to provide a daily period for developing number concepts. Fifteen minutes should be sufficient for this purpose in most situations, if number is being taught whenever opportunities arise in other areas of school living.

General Suggestions for Developing Number Readiness

1. Begin where the children are—build on the background which they have.
2. Develop the concept of number—one, two, three, etc., concretely through the use of things with which the child is familiar such as people, toys, marbles, books.
3. Use the number experiences of the children in your type of community. Do not worry if all of the knowledges and abilities given under "Suggested Content" are not developed. It is not imperative that a city child be exposed to the idea of one hundred pounds or a mile by the end of the second grade.
4. Provide for many varied concrete experiences with number through activities in which number is involved. Count the number of children absent and present, the number of books needed, etc. (Many of the activities suggested in the section on reading for developing reading readiness and the suggested activities in social studies and science are also rich in possibilities for developing number readiness.)

5. Discuss and work with numbers as the children come in contact with them in their daily living at home and in the community.
6. Use workbooks or teacher prepared materials designed to aid in developing number ideas.
7. Play games which children enjoy and which involve the use of number in keeping score. (Ring toss, bean bag throw, etc.)
8. Always stress understanding. There is no value in rote counting without meaning.
9. Number experiences should be enjoyable. Children should develop the idea that numbers are fun.

The Use of Groups of Objects to Teach Meaning of Numbers¹

There are several ways by which children and adults find the number of objects in a group. (1) They may count each individual item—one, two, three, etc. This is called “counting by 1’s”. (2) They may recognize a group of three in the large group, and then count the rest of the group by 1’s. This is called “partial counting”. (3) They may see smaller groups within the larger group and know, for example, that a group of two and a group of three combine to make five. (4) They may see a series of smaller, equal groups and know how many are in that number of equal groups; for example, they may see three groups of three and know that three threes are nine. This is called “multiplication”.

These four methods of apprehending groups of objects were listed in the order of their difficulty, each requiring a more mature control of number meanings than the preceding one. They are called the maturity levels of apprehending the number of objects in a group, although there is little correlation between chronological age and the maturity level used by a given pupil.

For example, when asked to name a group of four beans, one child might point to each bean and say, “One, two, three, four—there are four beans.” Another child might say, “Here are three beans, and one more makes four beans.” A third child might say, “Here are two groups of two beans, so there are four beans.” All three pupils gave accurate responses, but the second and third children used more mature ways of arriving at their responses. This relative maturity indicates a more ad-





































¹The material, beginning with this topic and continuing to “Ordinals” on page 362, was contributed by Lucy Rosenquist, Colorado State College of Education, Greeley.

vanced and clearer understanding of the meaning of four. The progress a pupil makes in the understanding of number ideas should be not only the accuracy of his response, but also the maturity level on which he works to arrive at his response. It should be remembered, too, that mastery of one maturity level does not necessarily lead a pupil to discard it to work on a higher level.

If you want your pupils to work on the higher maturity levels, you will have to teach them to do so. The time to begin this instruction is when pupils are first learning to deal with numbers. If they learn to deal maturely with the numbers of the first decade, they will have established habits which will help them to progress in the understanding of other numbers as they use them.

Materials which help children to progress from one maturity level to a higher one, are flash cards with spot patterns of numbers from one to ten, pictured objects arranged in patterns, and small objects to be used as counters such as sticks, buttons, beans, acorns, or small squares of paper.

Spot patterns used on flash cards are shown below :

Number	Quadratic	Diamond	Domino	Triangular
2				
3				
4				
5				
6				
7				
8				
9				
10				

These patterns may be arranged on oak tag flash cards of any preferred size. Care must be taken to have the groupings in the patterns stand out clearly, and to make the spots clear and distinct. Round spots are preferable to square or oblong ones. These may be colored with paint or crayola, or printed with a cork of the desired size, using the ink pad from a printing set. If small dots are desired, the end of a pencil can be used as a stamp. Usually the spots should be at least three-fourths of an inch in diameter. Gummed parquetry circles may be purchased from any kindergarten supply company. They come in good colors, are not expensive, and are easily applied, but they are not durable. At least three different patterns of each number should be used.

A very useful item of equipment for the teacher in presenting spot patterns to children is an oblong of dark felt to be hung in front of the class. On this can be placed circles of felt or flannel that will stay in place if rubbed lightly. Arrangements of spots may be quickly made and as quickly re-arranged. For example, when a child has counted a group of seven objects by twos or threes he may make a pattern of his counting on the felt board. It may be used to show patterns of number discoveries and the solutions of problems. This helps him think specifically of the number relations involved in the activities.

Sets of flash cards showing spot patterns of numbers in different arrangements made by the teacher are important material in teaching children to think of numbers as made up of groups of units and to recognize each number in different groupings. They need to recognize six as two groups of three, as a group of four and a group of two, as three groups of two, etc. These cards should be used with the children during the time they are learning to apprehend small groups of objects by more mature methods than counting. They are used as any other flash cards, having children answer such questions as: "How many spots? How many groups of two? Of three? What two groups do you see?"

Many games may be played with flash cards. Simple matching games in which a player can win the cards that match are readily organized by any teacher to meet the ability of the players. For a game called "More or Less", a great favorite with seven-year-olds, spot patterns are arranged on cards of two different colors to make a pack of about thirty cards. These

are shuffled and divided evenly between two players. Each player places his cards face down in front of him. The play consists in having each player expose the top card in his pack. If the cards are of different color the player whose card has the greater number of spots scores the difference between the numbers. For example, if Mary turned up a red card showing eight spots, and Jane turned up a blue card showing five spots—Mary would score three. When both cards are the same color, the player having the lesser number scores the amount of the difference. The score is kept on some scoring device. This game gives opportunity for rapidly making many exact comparisons of numbers with the help of patterns.

The small objects used as counters have no interest in themselves and can be used to represent any idea the pupil is interested in. They are easily manipulated and suggest grouping; hence, their use may provide practice in mature ways of recognizing the number of objects in a group or in reproducing a group. While the ability on the part of a child to see a group of nine lima beans as three groups of three and to know that there are nine beans does not guarantee that he will recognize nine books or nine pencils on that same level, it does mean that he has acquired the necessary mental equipment. He must learn to apply the idea to other situations.

When small papers are used, it is very helpful to use a seat work folder to hold them in place. This folder is made on two eight-inch squares of cardboard. One side of each cardboard is covered with craft or typewriter paper folded to make small tucks. This is held in place by gummed tape around the edges. The two boards are fastened together like a book so that the tucked papers are on the inside. The small papers can be arranged and held in place by the tucks and the folder can be used to show the arrangement to the whole group. Arrangements made of small objects such as beans or sticks cannot be shown to the group as easily.

When children have become interested in the patterns of numbers, they can arrange patterns with counters and show them to the group, explaining the arrangement in their own words. If the seat work folders are used, the patterns can be shown in the folder, but if other small objects are used, the pattern will need to be drawn on the board by the pupil.

In using counters arranged in different groupings, children can, with guidance, discover such ideas as "eight is two 3's and two more, and seven is two 3's and one more."

Simple problems of addition and subtraction involving familiar numbers and situations can be solved with counters and used to demonstrate and explain the solution. In developing the meaning of numbers, addition and subtraction will not be presented as such, but classroom activities will provide many problems in which small groups will need to be combined into one large group or a large group separated into smaller groups. These problems can be solved with counters and then explained to the group by the pupil making the solution.

All teachers are familiar with the use of play stores in teaching number ideas. If the children are to really think about the numbers involved, the other elements of a play store will have to be subordinated. This can be done by arranging the pictures of the articles to be sold on a large sheet of cardboard with a slip showing the price of the article under each of them. The pupils are given a certain number of counters and asked to decide what articles they can buy with their money if they spend it all. This will involve arranging the counters into groups with a motive which calls attention to the characteristics of the number. If a child has seven cents to spend, it is the number itself which determines the objects which can be purchased.

The "Teens" Numbers

The important characteristic of a "teens" number to be taught in the primary grades is that the figure "1" at the left in such a number means one group of ten and the other number means so many single units. This needs to be taught before pupils learn addition and subtraction facts whose sums and minuends are "teens" numbers.

Small sticks which can be tied into bundles of ten are valuable materials to use to teach the idea of the group of ten.

A demonstration chart can be made of a piece of heavy card board (24"x36") on which lighter paper folded into tucks has been attached by a binding of gummed tape around the edges. Small colored papers can be put in these tucks and held in place so they may be seen by the whole class. The small papers can then be used to show the idea of the group of ten.

Much work with sticks or small papers needs to be done to make the meaning of the group of ten clear.

When the pupils are ready to add two numbers whose sum is a "teens" number, the idea of the group of ten needs to be utilized as shown in the following example: How many are 8 and 9?

Have a pupil place 8 small papers in one tuck of the chart and 9 papers in another tuck. By inspection the pupils will see that the answer will be more than ten. The pupils will be guided to see that by taking one of the eight papers and putting it with the nine papers it will make one group of ten and leave seven ones which is one ten and seven ones or 17.

It is important that pupils manipulate small papers, sticks, or other objects used as counters in adding two numbers whose sum is a "teens" number and explain the manipulation many times until the ideas are really understood.

Also when teaching subtraction facts where the minuend is a "teens" number and the difference is less than ten, the group of ten needs to be utilized.

In the example $17-8$, have the materials arranged into one group of ten units and seven extra units. When taking eight units away from the seventeen, all of the seven units will be required and one will have to be taken out of the group of ten leaving that nine, so $17-8$ are 9.

The pupils need to arrange objects to show such subtraction many times until the meaning is clear.

Since the "teens" numbers constitute the first contact which pupils have with the ten grouping, on which our number system is based, it is especially important that the pupils understand it clearly before going on to larger numbers.

Establishing Automatic Control of the Addition and Subtraction Facts

It is very important that the simple addition and subtraction facts become known automatically. But this cannot be achieved by all the pupils in a single year. There are stages of control and if these stages are recognized and utilized the learning of these facts will be more easily and permanently achieved.

The first stage, after the presentation of these facts, is when the pupils need to use small objects as counters to find out the answers.

The second stage is when the pupils use some related known fact to help them think out the answer, as when a pupil uses the

known fact $3+3=6$ to help him know that $4+3=7$. The pupils need to be specifically helped to discover and utilize these relationships. With some facts as $5+4=9$, there are at least three related facts that might be used: $5+5=10$ or $4+4=8$ and $5+3=8$. They all need to be suggested and each pupil be allowed to select the one which seems most helpful to him. Asking pupils how they thought out the answer and having them explain it to the whole group helps them to establish the practice. Some pupils will use the ideas more readily than others. Giving pupils the feeling that they can think out the answers to examples will prevent them from resorting to the immature method of counting by ones.

The memorization of the abstract facts comes gradually, but it should not be left to chance. Very specific drills should be given at frequent but regular intervals until automatic control has been achieved. This may be at the end of a year, or after two or three years depending upon the understanding which the pupils have of these facts.

The Use of Classroom Experience in Teaching Arithmetic

Experiences are of two types (1) incidental and (2) controlled. Incidental experiences are those which just happen. Many children learn a great deal of arithmetic from them but some learn nothing at all or develop erroneous ideas of number. Incidental experiences have value to the extent that children get right ideas from them. When such experiences arise they should be utilized, but they cannot be depended upon to teach arithmetic.

Controlled experiences are those planned by the teacher to give the pupils opportunities to use specific ideas or skills and every teacher should see that they are provided.

In practically every school room there is a real need for taking the attendance sometime during the day. The following four paragraphs describe the way it was done in one classroom:

There were twenty-seven children in the room. They were seated six at each of three tables, five at one table, and four at another. On one wall was a small bulletin board made of tacked paper so that cards could easily be inserted and held. A space on the bulletin board was assigned to each group in which to insert a card giving the number in attendance each day. The number names (words) from one through six were printed on

the cards to be inserted, and enough duplicates were made to provide for all the groups. Each day, one person at each table reported the number present at that table and then inserted the corresponding card in the bulletin board. The accuracy of the report was checked by the other members of each group.

At the beginning of this activity, the teacher was alert while attendance was being taken to discover some child who did not count his group by 1's. When she discovered one, the pupil was asked to explain to the group his method of finding the number at the table. The response was "There's one on each side, so there are four," or "There are two on that side, two on that side; that's four, then, five, six," or "There are three here and two there, so that's five." To count in some quick way was made important, and the pupils were encouraged to do that. Each new way discovered by a pupil was recorded on an experience reading chart. When a child presented a new way, the previous records were reviewed by the group to be certain that the way really was new.

When the number names as words became familiar to the children, the teacher substituted the numerals on the cards to be inserted in the bulletin board. When those became familiar, each reporter wrote the numerals with black crayola on a paper and inserted it in the bulletin board.

The number of children in the groups were changed from time to time by rearrangement of the tables, each child working with a larger group as his ability developed. As the size of the group for each reporter increased, new ways of determining the number present were developed and recorded in the pupil's own words. The teacher suggested changes only to make the statements clear, grammatical, and accurate.

The records of attendance for each group were referred to when materials were passed. The pupil passing the scissors to a group used the attendance record to know the number of scissors needed. The teacher encouraged the pupils to use mature methods in selecting the exact number of materials needed by the same methods used in counting the children. Records were made of these discoveries in the pupil's own language. The records were such as: "If I take three scissors in one hand and three in the other, I have enough for my table." "I can count the books by 2's." These records were used in the same ways that the attendance records were used. The num-

bers used in passing materials changed as the size of the attendance groups changed. The teacher attempted to have each group total ten or less.

Provisions that make the two classroom activities described above valuable for teaching children the meanings of numbers are:

1. Provision for the use of numbers of ten or less
2. Provision for the stimulation of progress to higher maturity levels
3. Provisions for individual differences
4. Provision for use of different forms of number symbols
5. Provision for purposeful naming and reproducing small groups of objects of various kinds
6. Provision for the child to record his number ideas and discoveries in permanent language forms
7. Provision for thoughtfully re-reading and reviewing the records
8. Provision for varied applications of the meanings and the practice of the skills over a long period of time

With these features in mind, other classroom activities can be arranged which provide similar learning opportunities. Also, these same activities can be adapted to other classrooms. Children seated at desks are as easily arranged in small groups as when seated at tables.

The Use of Profitable Games

Every primary teacher is familiar with games that have been adapted for use in school rooms, such as bean-bag, ring-toss, hull-gull, ten-pins, and dominoes. It is important to remember, however, that a game teaches only the numbers involved in the game, and then only on condition that the game is adapted to the pupil's level of learning. In games with scores, the child who cannot do column addition is hopelessly lost unless some sort of scoring device is provided on which he can keep his score without adding.

There are many different kinds of such scoring devices. The simplest type is kindergarten sticks (burnt matches, twigs,



Many games which children enjoy help in developing number understandings

or skewers do just as well). These are used at first by taking one stick for each point won in a game, and when the game is finished, the sticks are counted to find the score. The use of these sticks can also provide opportunity for learning more mature methods of counting. For example, when the pupils are ready for that advanced work the sticks can be arranged like tallies and counted by 5's, and in games like ring-toss where each successful throw counts two, one stick may represent two points. Peg boards, arranged like cribbage boards, can be made in any workshop. Pupils can be taught to peg their scores with wooden pegs made of dowel sticks. Wooden button molds, painted to make groups of five and strung on wires in a frame like an abacus, can be used for scoring games by children in various stages of maturity. Tallying with marks on the board or on paper is more difficult than arranging sticks and should not be expected of seven-year old children unless they have shown ability to do it.

The numbers involved in a game need to be controlled carefully. Commercial games commonly use large numbers for scores and children like to use those numbers. When large numbers are used by young children the value of the game in teaching numbers has practically been removed since children are not ready to use them understandingly. With attention given to arranging the details of a game so that the numbers involved are on the appropriate learning level, the common games, of which children never tire, can become valuable educational experiences.

The aisles between rows of desks fastened to the floor are very good places to play such games as bean-bag, ring toss or ten pins, and makes it possible to have several small groups playing at one time. Having three groups of five playing a game is much more profitable to the players than having one group of fifteen.

There are many variations of these basic game forms that can be found in educational literature or made up by the pupils or any ingenious teacher. The important point to be remembered is that for young children the scores must be kept small if the players are to derive value from them.

When children are ready to use large numbers, scoring devices need to be arranged which will give the children an insight into the meaning of large numbers and our number system.

One such device is to use small squares of paper in three different colors. The squares of one color counting one hundred, those of another, ten, and those of the third, one. If the player's score is 28, he can take two "ten" squares and eight "one" squares. If his second turn gives him a score of fourteen, he will have three "ten" squares and twelve "one" squares.

He can exchange the "one" squares for one "ten" square and two "one" squares and he will have four "ten" squares and two "one" squares, or forty-two.

Another scoring device for scoring large numbers is a small board in which is bored four rows of ten holes each. The first row represents ones, the second tens, the third hundreds, and the fourth thousands. The score is kept by putting pegs into the appropriate holes. Again, if a player made a score of twenty-eight, he would put two pegs in the "tens" row and eight pegs in the "ones" row. When he next scored fourteen, he would put one peg in the "tens" row and two pegs in the "ones" row which would make another ten. He would then put one more peg in the "tens" row, take out the pegs in the "ones" row, and then peg the two remaining points in his score in the "ones" row. In the beginning he would need to proceed in this laborious way but it would give him a clear picture of the meaning of the "tens" grouping in our number system. As he gains this, he eliminates some of the steps in the process.

This type of scoring device has value and should be used by children who can not do column addition to meet the game requirements.

Ordinals

The meaning and use of ordinals (first, second, etc.) can be developed through daily classroom living in which they appear such as "The fifth row may go to the board. Please bring me the second book on the shelf," etc. The following games give children practice in using ordinals:

Clap In

Have the children seated in rows. One child is "it". He goes to another and says, "Please move to the fifth chair in the

first row," or some other specified chair. The child spoken to must go to this place. If he goes to the right place the children clap; if not, they shake their heads. He may ask once for the directions to be given again to him. If he goes to the right place he asks that child to move to a certain chair.

Telephone

One child is chosen as operator. Another child calls up the operator, asking for a pupil by giving the seat and the row which he occupies, as "Please give me the third one in the first row." The operator calls this person by name. If correct, she takes the place of the person called, who in turn becomes the operator.

Fractions

Many children have some concept of one-half before coming to school. Opportunities arise in school for dividing many things in halves, such as using half pieces of paper, dividing an apple or candy bar equally between two children, etc. When these occasions arise what was actually done should be discussed. "How much of Jim's apple did he give to Mary? How much did he keep? How many parts were there when we cut the apple? What do we call each part? How many of these parts make a whole apple?" Many experiences of this type with many things result in a growing concept of the meaning of one-half. The meaning of $\frac{1}{4}$ and $\frac{1}{3}$ may be developed in similar ways. Use the term "one-quarter" as well as one-fourth.

Measures

Again, make use of the activities of the school to develop understanding of measures. Activities may also be planned for this specific purpose. Some suggested activities, games, and exercises follow.

Calendar Activities

Make a calendar for the month. Put birthdays on in red with child's name also in the space. Draw a circle around each day as it comes. Use the calendar for a record of the weather by pasting on one of the following to indicate what each day's weather is like.



Foggy



Windy



Cloudy



Snowy



Rainy



Sunny

At the end of the month use the calendar to make a weather report.

There were _____ foggy days.

There were _____ windy days.

There were _____ cloudy days.

There were _____ snowy days.

There were _____ rainy days.

There were _____ sunny days.

Telling Time

Make or buy a large clock face with movable hands. Ask children to make clock hands show:

When you go to bed.

When we eat lunch.

When we go home from school.

When we go out to play in the forenoon.

When we go out to play in the afternoon.

The teacher may show these times and ask children to tell the hour and what happens then.

Activities Using Several Measures

Simple recipes teach the measurements of teaspoonful, tablespoonful, and cupful. Children like to cook anything. Apple-sauce is easy to make and is edible.

Pounds, dozen, bushel, pint, quart, and gallon may be taught by means of playing store. Real measures should be used by children if they are to develop correct concepts. The value of money, how to make change, and the use of money may also be taught in this way.

A Game Using Money

Toy money may be used in pretending to buy things. The

teacher says: "Pretend you are buying this and bring me enough money to pay for it."

a five cent tablet

a ten cent lunch

a fifteen cent book

a three cent balloon

a four cent candy bar

a twenty cent train

an eight cent box of clay

a twelve cent set of dishes

a twenty-five cent ring

a nineteen cent box of blocks

Actual objects may be used for more complete understanding.

Problem Solving

Most of the problems will be those growing out of the daily experiences of the children. They will be discussed and solved orally in the class group. Second grade pupils may begin some work with written problems. Care must be taken to see that all problems given involve only those facts and processes which have been taught.

GRADE THREE

Learning arithmetic through meaningful experiences with numbers should be continued throughout all of the grades. Understanding of what is done and why, should permeate all teaching and learning. The teacher will, therefore, continue to utilize as aids to motivate and clarify learning, the experiences which children have at school, at home, and in the community which involve arithmetic. He will continue to make use of concrete illustration of arithmetical concepts and procedures.

The "Suggested Content" for grade three is stated in more definite terms than those of the two preceding grades. This does not mean that every child must master every item of content included. Rather it suggests what the average child should be able to do if he has developed a sufficiently good background of number understanding in the two preceding grades.

Suggestions for adapting the entire arithmetic program to the varying learning rates of individual children will be found in the section "Special Helps in Teaching Arithmetic."

In cases where number facts are to be taught, such facts have been included in the course of study so that the teacher, if he wishes, may use them in presentation and in making drill exercises and tests. Presentation, drill, and testing should be done with the facts in mixed order.

Suggested Content

Numbers

1. Learn to read and write numbers to 1000
2. Learn to read and write Roman numerals to twelve
3. Count by 100's to 1000

Addition and Subtraction

1. Review the 64 addition facts with sums of ten or less
2. Review the 64 subtraction facts with minuends of ten or less
3. Present the remaining 36 addition facts

Direct Facts

2

9

—

3 3

8 9

— —

4 4 4

7 8 9

— — —

5 5 5 5

6 7 8 9

— — — —

6 6 6 6

6 7 8 9

— — — —

7 7 7

7 8 9

— — —

8 8

8 9

— —

9

9

—

Indirect Facts

9

2

—

8 9

3 3

— —

7 8 9

4 4 4

— — —

6 7 8 9

5 5 5 5

— — — —

7 8 9

6 6 6

— — —

8 9

7 7

— —

9

8

—

4. Present the remaining 36 subtraction facts

$$\begin{array}{r} 11 \ 11 \ 11 \ 11 \ 11 \ 11 \ 11 \ 11 \\ \underline{2} \ \underline{3} \ \underline{4} \ \underline{5} \ \underline{6} \ \underline{7} \ \underline{8} \ \underline{9} \end{array}$$

$$\begin{array}{r} 15 \ 15 \ 15 \ 15 \\ \underline{6} \ \underline{7} \ \underline{8} \ \underline{9} \end{array}$$

$$\begin{array}{r} 12 \ 12 \ 12 \ 12 \ 12 \ 12 \ 12 \\ \underline{3} \ \underline{4} \ \underline{5} \ \underline{6} \ \underline{7} \ \underline{8} \ \underline{9} \end{array}$$

$$\begin{array}{r} 16 \ 16 \ 16 \\ \underline{7} \ \underline{8} \ \underline{9} \end{array}$$

$$\begin{array}{r} 13 \ 13 \ 13 \ 13 \ 13 \\ \underline{4} \ \underline{5} \ \underline{6} \ \underline{7} \ \underline{8} \ \underline{9} \end{array}$$

$$\begin{array}{r} 17 \ 17 \\ \underline{8} \ \underline{9} \end{array}$$

$$\begin{array}{r} 14 \ 14 \ 14 \ 14 \ 14 \\ \underline{5} \ \underline{6} \ \underline{7} \ \underline{8} \ \underline{9} \end{array}$$

$$\begin{array}{r} 18 \\ \underline{9} \end{array}$$

5. Column addition with carrying, using the 100 simple addition facts but involving no higher decade addition facts¹
6. Verbal problems in which the above processes are used
7. Subtraction problems without borrowing
8. Higher decade addition facts which do not involve bridging²

¹Higher decade addition facts are those in which a one digit number is added to a two digit number such as: 11, 16, 24, etc. These facts are needed in column

$$\begin{array}{r} +5 \ +9 \ +7 \\ \hline \end{array}$$

addition. Before higher decade facts are introduced, the child has learned the 100 simple addition facts. Thus he knows 6 but has to learn 16, etc. Some children make this

$$\begin{array}{r} +3 \qquad \qquad +3 \\ \hline \end{array}$$

transfer quite readily; others do not. For this reason it is desirable to teach the higher decade addition facts to all children, but those who learn them easily need less drill. The response to the higher decade facts should be automatic just as with the simple facts.

²It is recommended that the higher decade addition facts through 39 be taught.

Most of the problems in column addition which the average person uses will not be so long as to call for the use of higher decade addition facts beyond this point

$$\begin{array}{r} 39 \\ +9 \\ \hline \end{array}$$

Bridging means carrying from the one's column to the ten's column. Thus 16 does

$$\begin{array}{r} +3 \\ \hline \end{array}$$

not involve bridging but 16 does. The diagonal lines in the tables of higher decade

$$\begin{array}{r} +8 \\ \hline \end{array}$$

addition facts separate those which do not involve bridging from those which do. The higher decade addition facts which do not involve bridging should be introduced and taught first.

9. Problems using these higher decade addition facts without bridging
10. Higher decade addition facts involving bridging
11. Problems using these higher decade addition facts involving bridging
12. Add three digit numbers with three addends, with carrying and involving higher decade addition facts with bridging
13. Subtract three digit numbers with borrowing in only one place
14. Check addition by adding in opposite direction
15. Check subtraction by adding subtrahend and remainder to get the minuend

Multiplication and Division

1. The 87 multiplication facts whose products do not exceed 45.

0 1 1 1 1 1 1 1 1 1	0 2 3 4 5 6 7 8 9
0 0 1 2 3 4 5 6 7 8 9	1 1 1 1 1 1 1 1 1
— — — — — — — — —	— — — — — — — — —
2 2 2 2 2 2 2 2 2	0 3 4 5 6 7 8 9
0 2 3 4 5 6 7 8 9	2 2 2 2 2 2 2 2
— — — — — — — —	— — — — — — — —
3 3 3 3 3 3 3 3	0 4 5 6 7 8 9
0 3 4 5 6 7 8 9	3 3 3 3 3 3 3
— — — — — — — —	— — — — — — — —
4 4 4 4 4 4 4 4	0 5 6 7 8 9
0 4 5 6 7 8 9	4 4 4 4 4 4
— — — — — — — —	— — — — — — — —
5 5 5 5 5 5	0 6 7 8 9
0 5 6 7 8 9	5 5 5 5 5
— — — — — — — —	— — — — — — — —
6 6 6	0 7
0 6 7	6 6
— — —	— —
7 8 9	0 0 0
0 0 0	7 8 9
— — —	— — —

2. Higher decade addition facts, not already taught, needed in multiplication problems with multiplication facts whose products are not over 45¹

40	40	40	40	40	45	45	45	45	45
0	1	2	3	4	0	1	2	3	4
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

3. Multiplication involving carrying with three digit multiplicand and one digit multiplier not over 5
4. Check multiplication by reversing multiplicand and multiplier and multiplying
5. Division facts—with no remainders and with dividend not exceeding 45 (Use long division form in writing division facts.)

0) <u>0</u>	1) <u>0</u>	1) <u>1</u>	1) <u>2</u>	1) <u>3</u>	1) <u>4</u>	1) <u>5</u>	1) <u>6</u>	1) <u>7</u>	1) <u>8</u>	1) <u>9</u>
2) <u>0</u>	2) <u>2</u>	2) <u>4</u>	2) <u>6</u>	2) <u>8</u>	2) <u>10</u>	2) <u>12</u>	2) <u>14</u>	2) <u>16</u>	2) <u>18</u>	
3) <u>0</u>	3) <u>3</u>	3) <u>6</u>	3) <u>9</u>	3) <u>12</u>	3) <u>15</u>	3) <u>18</u>	3) <u>21</u>	3) <u>24</u>	3) <u>27</u>	
4) <u>0</u>	4) <u>4</u>	4) <u>8</u>	4) <u>12</u>	4) <u>16</u>	4) <u>20</u>	4) <u>24</u>	4) <u>28</u>	4) <u>32</u>	4) <u>36</u>	
5) <u>0</u>	5) <u>5</u>	5) <u>10</u>	5) <u>15</u>	5) <u>20</u>	5) <u>25</u>	5) <u>30</u>	5) <u>35</u>	5) <u>40</u>	5) <u>45</u>	
6) <u>0</u>	6) <u>6</u>	6) <u>12</u>	6) <u>18</u>	6) <u>24</u>	6) <u>30</u>	6) <u>36</u>	6) <u>42</u>			
7) <u>0</u>	7) <u>7</u>	7) <u>14</u>	7) <u>21</u>	7) <u>28</u>	7) <u>35</u>	7) <u>42</u>				
8) <u>0</u>	8) <u>8</u>	8) <u>16</u>	8) <u>24</u>	8) <u>32</u>	8) <u>40</u>					
9) <u>0</u>	9) <u>9</u>	9) <u>18</u>	9) <u>27</u>	9) <u>36</u>	9) <u>45</u>					

6. Divide—two and three digit dividends by one digit divisors —with *no* carrying and no remainder and involving only those division combinations already taught
7. Divide—two and three digit dividends by one digit divisors —*with* carrying and no remainder and involving only those division combinations already taught
8. Check division by multiplying quotient by divisor

¹Higher decade addition facts are used in multiplication as well as in column addition. In the problem $\begin{array}{r} 56 \\ \times 7 \\ \hline \end{array}$ we think: $7 \times 6 = 42$, put down the 2 and carry the 4.

Then $7 \times 5 = 35$, but we have 4 to add to it $\left(\begin{array}{r} 35 \\ +4 \\ \hline \end{array} \right.$ which is a higher decade addition fact. We have already learned the higher decade addition facts through 39, so the only new ones we need here are those given above.

Fractions

1. Continue work with fractions previously introduced
2. Introduce meaning of fractions with numerators larger than 1 (Example: $\frac{2}{3}$, $\frac{3}{4}$)

Measures

1. Money
 - a. Introduce decimal point as used in dollars and cents
 - b. Read and write dollars and cents
 - c. Add and subtract dollars and cents
 - d. Multiply and divide dollars and cents by one digit numbers
 - e. Make change for 5, 10, 25, and 50 cents
 - f. Stamps of small denominations (1, 2, 3, and 6 cent)
2. Time
 - a. Tell time to five minute intervals
 - b. Table of time (second, minute, hour, day, week, month, year)
 - c. Names of months
3. Table of liquid measure (pint, quart, gallon)
4. Weight. Develop concept of ounce

Commercial

Simple savings bank concepts

Problems

1. One step problems using only those processes which have been taught
2. Estimating answers

**Suggested Procedures and Other Aids for Teaching
Grade Three**

Numbers and Addition and Subtraction Facts

Many of the suggestions contained in "Suggested Procedures and Other Aids for Teaching for Grades One and Two" are applicable to the work with numbers and the addition and subtraction facts in grade three.

Number facts should be introduced concretely through the use of objects or counters which can be combined in different ways to show the various number combinations.

Only a few facts should be presented at any one time. After the meanings of these facts are developed, drill should be provided. Flash cards on which the combination appears on one side with the combination and the answer on the other are very helpful. These may be used with small groups, or by pupils working in pairs, one showing the cards and the other giving the answers. Taking turn about they may each see how many each can get right. A daily record kept by the pupil is often an incentive for improvement. Tests on the facts which have been presented and studied should be given from time to time and a record kept of each child's scores. After each test the child should be encouraged to study and drill on those facts which he missed.

The facts presented should also appear in simple verbal problems both oral and written. Care should be exercised to see that these problems involve only the facts already taught.

Games can be used to motivate learning of facts and to provide repetition of them. Most games are more effective if they are played by small groups since each child gets more turns and consequently, more repetitions. A few games which may be used for this purpose follow.

Winging Wild Geese

Arrange numbers from 1 to 9, in mixed order, on the black-board in an angle representing wild geese in characteristic flight formation. As a shell use any number from 1 to 9. The teacher or a pupil gives the shell to the shooter who wings the geese by naming, in rapid succession, the sums. The geese need not be shot in any particular order. This game can also be used with subtraction and multiplication facts.

Baseball

Designate desks about the room for four bases and pitcher's box in such a way that a baseball diamond will be formed by them. Choose sides and select a captain for each. The captains select a pitcher, catcher, and three basemen for each side. One side goes to bat, the other to the field. Those not selected for

playing positions may watch. Pitcher, catcher, and basemen should be changed each inning to give others a chance.

The batter and catcher stand together at home base and the pitcher takes his box with a pack of shuffled number fact cards (balls) in his hand. He flashes a card to the batter and catcher. If the catcher gives the correct answer first, one strike is counted on the batter. If the batter gets the correct answer first he goes to first base. If both answer at once it is called a foul ball. Three strikes make an out and three outs retire the side.

The runner on base advances if he is forced by another runner, or if the pitcher flashes a card to the base he is on and he answers correctly before the baseman does. If the baseman beats him, he is out. The pitcher may flash cards to the batter, or to bases, just as he chooses.

Keep score as in regular baseball.

The chief value of this game lies in the interest which it stimulates on the part of pupils to learn the facts. If after a game starts, responses are slow and uncertain, the game may be postponed on account of rain, and an indoor workout (study on facts) substituted.

Number Wheel

Draw a large wheel on the blackboard. Write the numbers, in mixed order, from zero to nine around the circumference. Place another number in the center. Both the outer digits and the center number should be changed from time to time. The teacher, or another pupil, points to the digits in the order given, going around the wheel in either direction, and a pupil gives the sums. Keep score.

This device can be used for number facts in subtraction, multiplication, and division.

Column Addition and the Higher Decade Addition Facts¹

Only after a child knows the addition facts involved is he ready for column addition. For example, in adding 2 unless a

$$\begin{array}{r} 7 \\ 8 \\ - \end{array}$$

child knows that $9+8=17$, he cannot successfully add the above

¹The materials beginning with this topic and continuing to "Fractions" on page 384 were contributed by Grace Godfrey, Colorado State College of Education, Greeley.

example. Every teacher should carefully plan column addition problems so no new or unknown addition facts are involved.

A wide variety of practice in column addition is better than concentrated practice on a few problems. The teacher can prepare many column addition problems in which the 100 addition facts are used.

In column addition the child should be taught to check every example. At first this should be done by adding the problem a second time the same direction. Later, after the teacher is certain that no new facts are involved, it should be done by adding in the reverse order. For example in adding 5

$$\begin{array}{r} 9 \\ 3 \\ 6 \\ - \end{array}$$

if the child adds down he must know $5+9$; $14+3$; and $17+6$; but if he adds up he must know $6+3$; $9+9$; and $18+5$. The teacher must watch to see that no new facts are involved in checking; otherwise, counting will result.

In column addition children should be taught to think the sums as they add up the column, without putting in extra steps.

For example, in adding the column: 3

$$\begin{array}{r} 4 \\ 8 \\ 7 \\ - \end{array}$$

think—15, 19, 22; *not* 7 and 8 are 15, 15 and 4 are 19, and 19 and 3 are 22.

Many column addition examples cannot be used until the higher decade addition facts have been taught. In teaching the higher decade addition combinations, it is imperative that the child learn to decide at a glance how many tens are involved and then add the correct ending. For example, in 24 the child

$$\begin{array}{r} +4 \\ - \end{array}$$

should immediately see that only two tens are involved and then knowing that $4+4$ are 8, say 28. In the example 36, the child

$$\begin{array}{r} +9 \\ - \end{array}$$

should be taught to see that four tens are involved and immediately say 45, knowing that $6+9$ added together must end in a 5.

Carrying and Borrowing

If children fully understand our number system, the relationship of ones to tens, tens to hundreds and thousands and the like, the teaching of carrying and borrowing is more meaningful and can be learned more easily.

The first work in carrying should be in carrying one ten, but very soon children should have practice in carrying two and three tens. An explanation of carrying can be made by using a problem similar to the following: John earned 17 cents and had 15 cents given to him. How much money did he have in all? Explain to the children that:

17 cents is 1 dime and 7 cents and that

15 cents is 1 dime and 5 cents

Adding we get 2 dimes and 12 cents. Twelve cents is 1 dime and 2 cents. Adding the 1 dime and 2 cents to the 2 dimes we already had, we get 3 dimes and 2 cents, or 32 cents.

Other similar examples may be used until children understand the process, then they may simply add 17 thus: $7+5$ are 12.

15
—

Put the 2 in the ones column; carry the 1 "ten" and add it to the other numbers in the tens column $1+1+1=3$. Place the 3 in the tens column. Answer 32.

Bundles of sticks or tickets may be used to show how one carries. In the above problem 17 may be represented by one bundle of 10 sticks and 7 loose sticks; 15 by one bundle of 10 sticks and 5 loose sticks. The two groups of loose sticks, containing the 7 and 5 loose sticks each, may be put together and then combined into one bundle of 10 with 2 loose sticks left. This bundle is then placed with the other two bundles of 10 sticks each, so in all there are 32 (3 tens and 2 ones).

After children have learned to carry by the above or similar methods, borrowing in subtraction may easily be shown.¹

Again begin with a problem. Ted has 43 cents and spends 27 cents for a toy airplane. How much money will he have left? Using coins show that:

¹Authorities in the field of arithmetic disagree in regard to the best method to use in subtraction. The helps given in this course are based on the take away and borrow method, but no definite recommendation is made as to the method which should be used. It is important, however, that *one method* be taught and *consistently* used throughout a school system. A child coming from another school with a well established method, different from that taught in the system to which he comes, should probably not be required to change.

43 cents is 4 dimes and 3 cents and

27 cents is 2 dimes and 7 cents.

When children see that 7 cannot be subtracted from 3, they will, in all probability, suggest borrowing a dime from the 4 dimes. Then the problem will read

43 cents is 3 dimes and 13 cents and

27 cents in 2 dimes and 7 cents

subtracting we get 1 dime and 6 cents or 16 cents.

Sticks or tickets may also be used to show borrowing. Forty-three cents may be represented by 4 bundles of 10 sticks each and 3 loose sticks. "We cannot take 7 sticks from the 3 loose ones so we borrow one bundle of ten sticks and put it with the loose sticks. We now have 3 bundles of 10 sticks each and 13 loose sticks. Subtracting, we remove 7 of the loose sticks which leaves six, and 2 of the bundles of ten sticks each which leaves 1. One bundle of 10 and 6 loose sticks are 16 sticks."

Later this problem may be thought through in this way: 43

$\begin{array}{r} -27 \\ \hline \end{array}$

16

"I can't take 7 from 3, so I borrow 1 ten from the 4 tens which added to the 3 units makes 13 units. 7 from 13 leaves 6. 2 from 3 leaves 1. Answer 16."

If children understand that 10 tens make a hundred and 10 hundreds make a thousand, borrowing from hundreds and thousands can be explained in the same way as borrowing from tens.

Checking Subtraction

Children should always check their work in subtraction. This may be done in one of the following ways:

$$\begin{array}{r} 546 \\ -274 \\ \hline 272 \end{array} \quad \text{or} \quad \begin{array}{r} 754 \\ -83 \\ \hline 671 \end{array}$$

$$\begin{array}{r} 272 \\ \hline 546 \end{array} \quad \begin{array}{r} 671 \\ 83 \\ \hline 754 \end{array}$$

Later they should be encouraged to do the work mentally without writing the extra figures. Writing the sum should not become a habit with children; change and do it mentally before it becomes too firmly established.

There are various levels of difficulty in subtraction examples. They should be taught one at a time. Arithmetic textbooks usually teach them in the correct order. The teacher should check his supplementary work carefully to see that no difficulties are involved which have not been taught.

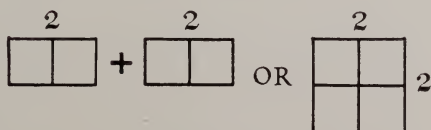
Multiplication

Controlled and directed activities should be used to develop the meaning of multiplication. Such activities may include buying stamps, candy, scoring in games, and the like. In these activities the pupils learn that the totals may be found by adding or by multiplication and that multiplication is an easier way of getting the totals.

When first introducing multiplication facts build an understanding of the facts to be learned. This may be done by:

- Showing that: 2 means 2 twos are 4. $\begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array}$ Another way of writing it is $\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$
- 2 means 3 twos are 6. $\begin{array}{r} 2 \\ 2 \\ 2 \\ - \\ \hline 6 \end{array}$ $\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$
- 2 means 4 twos are 8. $\begin{array}{r} 2 \\ 2 \\ 2 \\ 2 \\ - \\ \hline 8 \end{array}$ $\begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array}$

- Drawings on graph paper showing:



means 2 twos which are 4 and may be written $\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$

$$\begin{array}{|c|c|} \hline 2 \\ \hline \hline \hline \end{array} + \begin{array}{|c|c|} \hline 2 \\ \hline \hline \hline \end{array} + \begin{array}{|c|c|} \hline 2 \\ \hline \hline \hline \end{array} \text{ OR } \begin{array}{|c|c|c|} \hline 3 \\ \hline \hline \hline \hline \end{array} 2$$

means 3 twos which are 6 and may be written

$$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$$

$$\begin{array}{|c|c|} \hline 2 \\ \hline \hline \hline \end{array} + \begin{array}{|c|c|} \hline 2 \\ \hline \hline \hline \end{array} + \begin{array}{|c|c|} \hline 2 \\ \hline \hline \hline \end{array} + \begin{array}{|c|c|} \hline 2 \\ \hline \hline \hline \end{array} \text{ OR } \begin{array}{|c|c|c|c|} \hline 4 \\ \hline \hline \hline \hline \end{array} 2$$

means 4 twos which are 8 and may be written

$$\begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array}$$

The reverse forms may be shown in like manner. Many other ways of showing multiplication may be used.

Teaching the reverses

$$\begin{array}{r} 3 \quad 5 \\ \times 5 \quad , \quad \times 3 \\ \hline \end{array}$$

15 15 —in connection with one another is an economy in teaching.

3. The meaning of zero in the multiplicand may be shown through games in which zero scores are possible. For example, in a dart game Helen missed and got zero three times. What was her score? By addition we have:

$$\begin{array}{r} 0 \\ 0 \\ 0 \\ \hline 0 \end{array}$$

By multiplication we have 3 zeros or 0

$$\begin{array}{r} \times 3 \\ \hline 0 \end{array}$$

It can be explained that zero times a number means "none" of that number. 5 means zero fives.

$$\begin{array}{r} \times 0 \\ \hline \end{array}$$

Through such explanations children may make the generalization that "zero multiplied by any number equals zero and any number multiplied by zero equals zero."

Children understand the meaning of multiplication better if the expression 2 fours are 8 is used rather than 2 times four equals 8.

The vertical form 9 of writing multiplication is the one used

$$\begin{array}{r} \times 8 \\ \hline \end{array}$$

in actual life situations; therefore, it probably should be given preference. Children, however, should be acquainted with the equation form $9 \times 8 = 72$.

The term "factors" should be introduced and used in multiplication as well as the terms "multiplicand" and "multiplier" since the term "factors" is used in higher mathematics. (9 and 8 are the factors of the product 72.)

After the multiplication facts have been presented and studied the pupils may be shown how to multiply a two digit number by a one digit number. For example in the problem 64×2 :

$$\begin{array}{r} \times 2 \\ \hline \end{array}$$

$64 = 6$ tens and 4 ones

$$\begin{array}{r} \times 2 \\ \hline \end{array}$$

12 tens and 8 ones

12 tens and 8 ones $= 128$

2 fours are 8. 8 what? 8 ones.

2 sixes are 12. 12 what? 12 tens.

12 tens and 8 ones are 128.

After the children actually see the basic principle they soon discover for themselves the shorter method.

$$\begin{array}{r} 57 \quad 4 \times 7 = 28. \text{ Put down the 8 and carry the 2. } 4 \times 5 = 20. \\ \times 4 \quad 20 + 2 = 22. \text{ Put down the 22.} \\ \hline 228 \end{array}$$

¹Adapted from *Arithmetic in General Education*. National Council of Teachers of Mathematics. 16th Yearbook, p. 64.

Division

The division facts should be presented, studied, and learned written in long division form ($\overset{5}{5}\overline{)25}$). Later introduce the equation form of division ($25 \div 5 = 5$) since this is the form used in higher mathematics.

The expression "how many 5's in 25" is more meaningful and better understood by children than "25 divided by 5 equals how much?" or "5 goes into 25 how many times?"

After children have worked with multiplication long enough to understand the process, the corresponding division facts should be introduced. From then on the multiplication and corresponding division facts may be learned together.

As in multiplication, diagrams may be used to show the meaning of division. To find how "many 2's are in 6" six balls may be drawn in one group and then arranged in groups of twos, showing that there are 3 twos in 6. Six blocks may be arranged in groups of two each to show the same relationship. The teacher should provide many opportunities, especially in the beginning work in division for the children to develop an understanding of what division means through experiences similar to those just described. The facts should not be presented too rapidly. One set of $\begin{array}{r} 2 \quad 4 \quad 2\overline{)8} \quad 4\overline{)8} \\ \times 4 \quad \times 2 \end{array}$ may be enough for one

day. The number which can be given will depend on the children and the difficulty of the facts.

Division should be taught by the long division method with all steps shown. Short division is taught in grade seven as a short method.

One list of the steps in working a long division problem is as follows:

1. Divide—place the quotient properly.
2. Multiply—compare to see that the product is not larger than the number into which the divisor is being divided.
3. Subtract—compare to see that the remainder is not larger than the number into which the divisor is being divided.

4. Bring down—compare to see if the number which you now have is larger than the divisor.
5. Divide—multiply—compare; subtract—compare; etc.
6. Write “R” after the remainder if there is one.
7. Check the answer (multiply quotient by divisor and add remainder—should give dividend).

After children have learned to divide units they may recall that tens are added, subtracted, and multiplied as a unit and that the same is probably true with division. The important thing to remember is if you divide tens the answer must be in the tens place. In dividing $2\overline{)68}$ the child should think—“How many 2’s are in 6?” “3”, (remembering that the 3 is actually 3 tens, but that we do not have to say “3 tens” because the 3 will be put above the 6 in the tens place, making it mean 10). He already understands that there are 4 twos in 8. With the problem completed he finds that there are 34 twos in 68. The problem should appear:

$$\begin{array}{r} 34 \\ 2\overline{)68} \\ \underline{6} \\ 8 \\ \underline{8} \\ 0 \end{array}$$

There are certain major steps of difficulty in solving division problems. The teacher must, as far as possible, introduce only one step at a time and in the order of their difficulty. Arithmetic text books usually introduce these difficulties correctly. By following the order in which the steps are introduced in the text book, if a good text is used, the teacher can avoid problems having difficulties which the children have not been taught.

In grade three, however, only the easiest beginning of division is included. Harder steps are introduced gradually in later grades, with the hardest steps coming in the sixth grade.

Problem Solving

Before a child tries to solve any written problem, he must be taught to read carefully and with understanding.

In the lower grades children should be taught to think about three things before they begin to solve the problem.

1. What does the problem ask?
2. What does the problem tell?
3. What must I do with the numbers to get the right answer?

In the upper grades a fourth step is desirable

1. What does the problem ask?
2. What does the problem tell?
3. What facts will I need which are not given in the problem?
(As how many ounces in 1 pound?)
4. What must I do with the numbers to get the right answer?

Pupils should be encouraged to estimate answers before beginning computation. This estimate should be written down and compared with the computed answer.

Often if a child cannot understand a problem, if you substitute his name for the name of the child in the problem, and let him pretend that the events actually happened to him, he will more easily understand what must be done.

Fractions

Continue the development of the meaning of fractions by the use of concrete objects and discussions of fractions as they are used in the every day life of the child.

Measures

The types of activities suggested for grades one and two may be continued in grade three. Relate the work in measures to the things with which the children come in contact in their daily living. Let children experiment with measures and discover for themselves that there are 2 pints in a quart, 4 quarts in a gallon, etc.

The teacher can prepare some seat work which will aid in fixing the learning measures after they have been presented. The following exercise illustrates one type of such work.

An Exercise About the Months

The months may be taught as they occur in the daily routine of other work, but the teacher should check to make sure that all of the months are presented and understood. A seat work exercise such as the one given below may be used.

To the Pupil: Fill the blanks with the right months. The months are listed at the end of the exercise.

1. _____ is the first month of the year.
2. _____, _____, _____ are the spring months.
3. _____, _____, _____ are the summer months.
4. _____, _____, _____ are the autumn months.
5. _____, _____, _____ are the winter months.
6. _____ is the last month of the year.
7. In _____ we start to school.
8. Christmas comes in _____.
9. Armistice Day comes in _____.
10. Thanksgiving Day comes in _____.
11. There are _____ months in a year.
12. My next birthday comes in _____.

March

January

May

November

September

February

July

April

June

August

October

December

GRADES FOUR, FIVE, AND SIX

In these grades the foundation work of the previous years bears fruit. If it has been well done arithmetic continues to be exciting and interesting as new ways of working with number are explored. If, on the other hand, the child has not developed an adequate background of number understandings, the teacher can do nothing more profitable than to take time out, before beginning the work of these grades, to develop such background. This means re-teaching the work which the child has already had, but which for some reason did not bring forth the desired results. If this is not done, the teacher and child may expect nothing but continuous trouble in arithmetic.

Now is the time to stress automatic response to number facts. The sooner the child reaches this stage the better, since much of the new work involves the use of number facts. Many of the difficulties experienced in multiplication and division can be traced to number facts still unlearned. Mastery of number facts does not develop all at once but comes through use in drill, new processes, and problems. Most children do not achieve automatic recognition of facts in the grades where those facts are first presented.

Since all of the addition and subtraction facts have been presented in grades two and three, most children should acquire automatic response to them by the end of grade four. Most of the higher decade addition facts and the multiplication and division facts have been presented in grade three—the remainder are to be introduced in grade four. Most children should have reached the point of automatic responses to these facts early in grade five. If this is to be accomplished it means much well planned and well motivated drill, testing to discover facts which are not well learned, study on these facts, and many opportunities to use facts in other arithmetic work.

The teacher must ever keep in mind, that in arithmetic, gaps in learning cause serious trouble. A sixth grade child who still does not know many of the number facts in multiplication can do nothing more profitable than learn them, even if he is not able to finish all of the sixth grade work.

Suggested Content—Grade Four

Numbers

1. Read and write figure numbers to millions
2. Read Roman numerals to 100 and write Roman numerals to XXX¹

Addition and Subtraction

1. Continue to work in addition using the 100 simple addition facts and higher decade addition facts (Problems may involve work in four digit numbers with four addends.)
2. Continue to work in subtraction (Problems may involve work in four digit numbers with borrowing and zero difficulties.)

Multiplication and Division

1. Review the 87 multiplication facts of the previous grade
2. The remaining 13 multiplication facts

¹Some authorities believe that the ability to read and write Roman numerals to 12 is sufficient. Many texts, however, include work far beyond this point.

Direct

$$\begin{array}{r}
 6 \ 6 \\
 8 \ 9 \\
 \hline
 7 \ 7 \ 7 \\
 7 \ 8 \ 9 \\
 \hline
 8 \ 8 \\
 8 \ 9 \\
 \hline
 9 \\
 9 \\
 \hline
 \end{array}$$

Reverse

$$\begin{array}{r}
 8 \ 9 \\
 6 \ 6 \\
 \hline
 8 \ 9 \\
 7 \ 7 \\
 \hline
 9 \\
 8 \\
 \hline
 \end{array}$$

3. The remaining higher decade addition facts needed in multiplication

40	40	40		42	42	42	42	42		45	45	45	45
5	6	7		2	3	4	5	6		5	6	7	8
<hr/>	<hr/>	<hr/>		<hr/>	<hr/>	<hr/>	<hr/>	<hr/>		<hr/>	<hr/>	<hr/>	<hr/>
48	48	48	48	48	48	48				49	49	49	49
1	2	3	4	5	6	7				1	2	3	4
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>				<hr/>	<hr/>	<hr/>	<hr/>
54	54	54	54	54	54	54	54	54		56	56	56	56
1	2	3	4	5	6	7	8			1	2	3	4
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>		<hr/>	<hr/>	<hr/>	<hr/>
63	63	63	63	63	63	63	63	63		64	64	64	64
1	2	3	4	5	6	7	8			1	2	3	4
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>		<hr/>	<hr/>	<hr/>	<hr/>
72	72	72	72	72	72	72	72	72					
1	2	3	4	5	6	7	8						
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>					
81	81	81	81	81	81	81	81	81					
1	2	3	4	5	6	7	8						
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>					

4. Multiplication with 3 digit multiplicand and 2 digit multiplier involving carrying and zero difficulties
5. Remaining 13 division facts with even quotients

$$\begin{array}{l}
 6 \overline{)48} \quad 6 \overline{)54} \\
 7 \overline{)49} \quad 7 \overline{)56} \quad 7 \overline{)63} \\
 8 \overline{)48} \quad 8 \overline{)56} \quad 8 \overline{)64} \quad 8 \overline{)72} \\
 9 \overline{)54} \quad 9 \overline{)63} \quad 9 \overline{)72} \quad 9 \overline{)81}
 \end{array}$$

6. Division with 3 digit dividend and one digit divisor involving carrying and remainders

Fractions

1. Continue work with all fractions previously introduced
2. Develop the meaning of $\frac{1}{5}$, $\frac{1}{6}$, and $\frac{1}{8}$ through classroom experiences
3. Continue work with all introduced fractions with numerators larger than 1 (Example $\frac{3}{5}$, $\frac{5}{6}$, $\frac{7}{8}$, etc.)
4. Work in simple equalities with fractions already introduced (Example: $\frac{2}{4}=\frac{1}{2}$, $\frac{2}{6}=\frac{1}{3}$)

Measurements

1. Money
 - a. Continue use of money values in addition, subtraction, and multiplication
 - b. Continue practice in making change
2. Time
 - a. Continue work previously introduced and develop the concept of the second
 - b. Tell time to minutes
3. Table of linear measure (inch, foot, yard)
4. Perimeter of square and rectangle
5. Develop meaning of square measure (square inches and square feet)
6. Work in finding area of square and rectangle
7. Introduce dry measure (pint, quart, peck, bushel)
8. Ability to read and understand temperatures

Commercial

Introduce bills, sales slips, and personal accounts

Problems

Problems involving two processes (Do not include problems which involve facts and skills not previously taught.)

Suggested Content—Grade Five**Numbers**

1. Read and write numbers to billions

Addition and Subtraction

1. Continue practice on addition and subtraction

Multiplication and Division

1. Multiply three and four digit multiplicand by three digit multiplier
2. Multiply short method (annexing zeros) by 10 and 100
3. Divide by two digit divisor giving three figure apparent quotient with remainder
4. Divide short method (dropping zeros) by 10 and 100
5. Express remainders as fractions

Fractions

1. Further develop meaning of fractions
2. Add and subtract like and unlike fractions and mixed numbers with seen denominator (common denominator present in the problem) and answers reduced to simplest form (Include borrowing in subtraction of mixed numbers.)

Measurements

1. Money

Further work in making change and adding, subtracting, multiplying, and dividing dollars and cents
2. Time
 - a. Develop concept of decade, score, and century
 - b. Standard time zones in the United States
3. Table of weight (ounce, pound, hundred weight, ton)
4. Further work with area of squares and rectangles
5. Read and write denominate numbers such as 2 ft. 6 in.; 2 gal. 3 qt.; etc.

6. Introduce changing from one denomination to another
7. Remainder of table of linear measure (rod, mile)
8. Table of square measure (square inches, square feet, square yards)

Commercial

Further work in personal accounts

Graphs, Maps, and Scale Drawings

1. Read and construct simple bar graphs
2. Introduce line graphs
3. Figure distances on maps, using scale of miles
4. Make simple drawings to scale

Problems

More difficult two step problems

Suggested Content—Grade Six

Numbers

1. Read and write numbers in billions
2. Read Roman numbers in thousands

Addition and Subtraction

1. Add four and five digit numbers with five addends
2. Subtract five digit numbers

Multiplication and Division

1. Multiply five digit multiplicand by three digit multiplier
2. Multiply short method by 1000
3. Complete long division working with three figure divisor and three figure non-apparent quotient involving zero difficulties
4. Divide short method by 1000

Fractions

1. Add and subtract unlike fractions with unseen denominators
2. Multiplication of fractions by fractions

3. Multiplication of mixed numbers
4. Division of fractions by fractions
5. Division of whole numbers by fractions
6. Division of mixed numbers
7. Experience with finding what fractional part one number is of another

Decimals

1. Introduce the meaning of decimals
2. Read and write decimals to thousandths
3. Expose to decimals in ten thousandths, hundred thousandths, and millionths
4. Change decimals to fractions and fractions to decimals by use of knowledge of aliquot parts
5. Add and subtract decimals to thousandths
6. Multiply decimals to thousandths in the product
7. Divide decimals to thousands in the quotient
8. Introduce short method of multiplying and dividing decimals by 10, 100, and 1000

Per Cent

Introduce the meaning of per cent after the meaning of decimals has been developed. Simple problems in Case I per cent (finding a per cent of a number) may be given.

Measurements

1. Time
Time zones of the world
2. Introduce the triangle
3. Find the area of a right triangle
4. Use simple practical problems in addition, subtraction, multiplication, and division of denominate numbers (Multiplication should be more emphasized than the other three processes)

5. Table of square measure complete (square rod, acre, square mile, section)
6. Develop the concept of cubic measure
7. Table of cubic measure
8. Volume of rectilinear solids (pertaining to immediate environment)

Commercial

1. Introduce and work with receipts
2. Understanding of a checking account including depositing money, how to write checks and fill in stubs, and how to check own record with the bank statement

Graphs, Maps, Scale Drawings

1. Construct line graphs
2. Continue drawing to scale

Problems

1. Further work with two-step problems

Suggested Procedures and Aids to Teaching Grades Four, Five and Six

Multiplication by Two and Three Digit Multipliers

In teaching children to multiply by two numbers emphasize that in multiplying by the units figure the partial product begins under the units figure and in multiplying by tens that part of the partial product begins under the tens figure. Children will soon learn how this is done and will experience little difficulty in knowing where to place the partial product. The same principle will apply when multiplying by the hundreds or thousands figures.

After children have reached a more mature level, they may like to understand why the partial products are placed as they are. This may be shown as follows:

The problem 54 is the same as the sums of the two prob-

$\times 72$

lems 54 $\times 2$ and 54 $\times 70$. (Because the 7 is in the tens place it is 7 tens

or 70.) So, we can work these two problems separately, add the products and get the product of 54 $\times 72$. Now add

$$\begin{array}{r} 54 \\ \times 72 \\ \hline 108 \\ 3780 \\ \hline \end{array}$$

$$\begin{array}{r} 108 \\ 3780 \\ \hline 3888 \end{array}$$

Work out the problem in the usual way and from the previous explanation the pupil can see why the partial product, when we multiply by the 7 in the tens place, must begin in the tens place.

$$\begin{array}{r} 54 \\ 72 \\ \hline 108 \\ 378 \\ \hline 3888 \end{array}$$

Zeros in the multiplier can be explained by working out problems, putting the zeros in the partial product, and then showing how they may be left out.

$$\begin{array}{r} 3624 \\ 509 \\ \hline 32616 \\ 0000 \\ 18120 \\ \hline 1844616 \end{array} \qquad \begin{array}{r} 3624 \\ 509 \\ \hline 32616 \\ 18120 \\ \hline 1844616 \end{array}$$

The same can be done for the end zero in the multiplier.

$$\begin{array}{r} 392 \\ 70 \\ \hline 000 \\ 2744 \\ \hline 27440 \end{array} \qquad \begin{array}{r} 392 \\ 70 \\ \hline 27440 \end{array}$$

Perhaps it is best to allow children who learn arithmetic slowly and are easily confused to use the longer method. After all it is more important to be able to work a problem slowly but correctly than to work it rapidly and get an incorrect answer.

Zeros in the multiplicand are usually not a serious source of trouble.

Division

Although it is recommended that the division facts be presented and studied written in long division form $(4\overline{)12}$, children should learn that there are other ways of indicating division: as an equation $(12 \div 4 = 3)$; as a fraction $(12/4)$; and as a ratio $(12:4)$. Familiarity with these ways of expressing division will aid in understanding mathematical concepts which are to be developed later.

The harder aspects of long division cause much trouble to many children. In this course of study these harder steps are left until sixth grade. Some children may not be ready for them until seventh or eighth grades.

Procedures for the beginning steps in division are given in grade three. (See pp. 382 and 383.) Additional helps are suggested here.

Prerequisites to Learning Long Division

Success in division depends to a great extent upon:

1. Mastery of subtraction, multiplication, and division facts
2. Mastery of the processes of subtraction and multiplication
3. Understanding of what division is
4. A knowledge of our number system (the place value of tens, hundreds, thousands, etc.)

The wise teacher will conduct a thorough review on these facts, processes, and understandings before beginning long division with an individual or a group.

The Long Division Process

The teacher should recognize that:

1. Long division mastery involves nine steps of graded difficulties
2. One step at a time should be presented carefully by the teacher

3. Sufficient drill should be provided to automatize each step before the next step is presented.
4. The steps need not be presented immediately following one another but the more difficult steps may be presented one or more years after the easier steps were presented.

Fortunately, most of the newer texts in arithmetic do introduce division one step at a time with the more difficult steps presented later. If the teacher has a good text it is recommended that he study it carefully and follow it rather closely in teaching division.

The nine steps of graded difficulties are as follows:

1. Divisors which are nearly a multiple of 10; no carrying involved; no remainders involved.

$$13 \overline{)143} \quad 21 \overline{)853}$$

2. Carrying as the only difficulty

$$13 \overline{)182} \quad 33 \overline{)1782}$$

3. Borrowing as the only difficulty

$$41 \overline{)3444} \quad 51 \overline{)3621} \quad 91 \overline{)5733}$$

4. Both carrying and borrowing involved

$$43 \overline{)3913} \quad 54 \overline{)4914} \quad 65 \overline{)3445}$$

5. Simple examples in which the trial quotient is not the true quotient:

$$12 \overline{)600} \quad 14 \overline{)840} \quad 16 \overline{)720}$$

Note: The first trial quotient in the first example is 6; that in the second example is 8. The first true quotient figure in the first example is 5, and in the second it is 6.

6. More difficult examples in which the trial quotient is not the true quotient:

$$45 \overline{)3555} \quad 49 \overline{)2793} \quad 58 \overline{)2842}$$

7. Very difficult examples in which the trial quotient is not the true quotient:

$$47 \overline{)4418} \quad 49 \overline{)4116} \quad 74 \overline{)7252}$$

8. Problems having three figures in the divisor:

$$111 \overline{)8991} \quad 113 \overline{)1356} \quad 122 \overline{)1464}$$

9. Problems having zero in the quotient:

$$67 \overline{)27001} \quad 74 \overline{)518370} \quad 286 \overline{)87516}$$

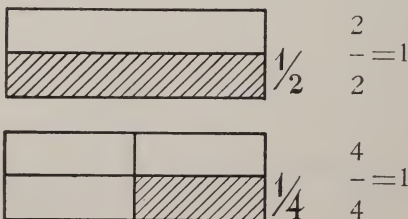
Development of the Meaning of Fractions¹

The child entering school has some knowledge of fractions. This has been proved by some studies and by the experience of many primary teachers. Later, he often seems to lose that sense of meaning acquired from life experiences. Such loss should not occur. As the need arises for organizing the experiences of the child gained in real life situations involving fractions, the necessity of using media providing stepping stones from the incidental learning in the first four grades to the abstract manipulation of the fractions in subsequent work, becomes imperative. Too often the teacher is content to teach by memorization how to manipulate fractions. In such cases, teachers of the upper grades must see to it that the child, through organized exercises with concrete or semi-concrete materials, grasps these abstract ideas by capitalizing on the observation of the results he obtains in numerous experiences from which the meaning of such abstractions naturally emerges. If such experiences were repeated until the child saw for himself what was done, indicating that his mind was ready for such an abstract idea, there would be less grief in the upper grades over remedial work in arithmetic. There certainly is an arithmetic readiness in a child's experiences as truly as there is a reading readiness.

One of the most easily obtained and useful materials for showing relationships used in dealing with fractions is squared paper. One-half inch squared paper is better in the beginning of the work, but as the pupils acquire skill in making illustrations, quarter-inch squared paper is more economical.

Meaning of a Fraction as a Part of a Unit²

The following drawings may be used to show concretely this meaning of a fraction:



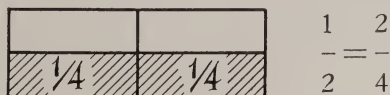
¹The materials beginning with this topic and continuing to "Measures" on page 412 were contributed by Elizabeth Kendel, Colorado State College of Education, Greeley.

²There are, of course, many ways other than those suggested, of developing the meaning of fractions.

Similar drawings may be made to show $\frac{1}{3}$, $\frac{1}{8}$, etc., of a unit.

Show why the fractional part of the unit is given its name. Point out that each part of the fraction tells something about it. For example in $\frac{1}{2}$, the 2 tells into how many parts the unit is divided and the 1 tells how many of these parts we are considering. Also show how a unit which has been divided into parts is written $\frac{2}{2}$, $\frac{4}{4}$, $\frac{8}{8}$, etc.

Changing from Larger to Smaller Fractional Units



Similar drawings may be used to show other fractional relationships such as $\frac{1}{2} = \frac{3}{6}$, $\frac{1}{3} = \frac{2}{6}$, etc. Work of this type forms a meaningful foundation for changing fractions from lower to higher terms and for reducing fractions to lowest terms. When such understanding is established and the need arises, the pupils may be taught how to make these changes without the use of drawings, and drill provided to fix this ability.

The type of work suggested in these two sections should result in the development of the following understandings:

1. Meaning of a fractional unit as one of the equal parts of something considered as a whole
2. The number of fractional units in a whole and how a fractional unit can be cut or changed into smaller fractional units
3. The number of parts is multiplied as the given fraction is cut into smaller units.
4. The name of the fraction comes from the number of parts in the whole.

Adding and Subtracting Fractions

By reviews of previous work the attention of the children about to organize their experiences in adding and subtracting fractions should have emphasized the fact that only like units may be added or subtracted. Gallons, quarts, and pints or yards,

feet and inches must be changed to like units before they can be combined. Fractional units, no less, must be alike to be combined.

From the diagrams pictured in previous exercises or from similar drawings, the combinations of addition and subtraction are easily shown, and statements of procedures easily worked out by the pupils. Such examples as $\frac{1}{4}$ $\frac{1}{6}$ $\frac{5}{8}$ give oppor-

$$\begin{array}{r} +\frac{3}{4} \\ +\frac{5}{6} \\ +\frac{7}{8} \end{array}$$

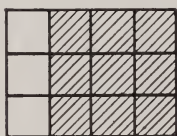
tunity to introduce reduction of improper fractions to whole or mixed numbers. $\frac{3}{4} + \frac{2}{3}$ shows the need of changing to a common fractional unit and the reduction of the answer to a mixed number.

The problem $\frac{3}{4} + \frac{2}{3}$ may be shown graphically thus:

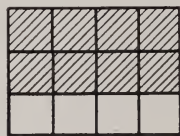
$$\begin{array}{r} +\frac{2}{3} \end{array}$$

$$\begin{array}{r} 3 \quad 9 \\ - = - \\ 4 \quad 12 \end{array}$$

$$\begin{array}{r} 2 \quad 8 \\ - = - \\ 3 \quad 12 \end{array}$$



+



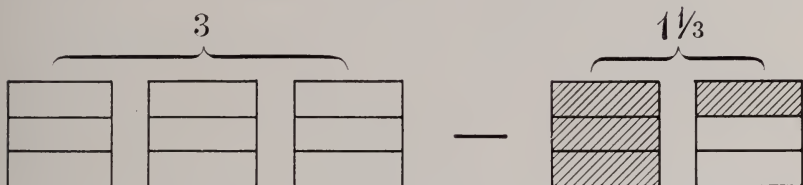
$$\begin{array}{r} 17 \quad 5 \\ = - = 1 - \\ 12 \quad 12 \end{array}$$

If the meaning of previous diagrams is understood clearly few examples of addition and subtraction should be necessary.

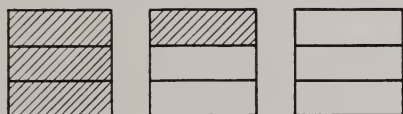
Subtraction may be shown in a similar manner. However, subtraction of a mixed number from a whole number should be shown somewhat differently in order that pupils may avoid the error of writing down the given fraction in the answer, as $10 - 6\frac{1}{4} = 4\frac{1}{4}$, or another error made by an eighth grade pupil of subtracting $2\frac{3}{4}$ from $12\frac{1}{3}$ and getting $9\frac{5}{12}$. Questioned, he was found to proceed correctly until he borrowed 1 from units column and changed it to 10 adding it to $4/12$ to make $14/12$. This is not an uncommon error. The same mistake often occurs in work in denominate numbers. That one, borrowed, always makes 10, has been drilled into the consciousness and is often applied wherever borrowing is needed. Teachers should be on the alert for this error and the use of diagrams will show the need of cutting the unit needed into the correct fractional parts.

To illustrate concretely the problem $3 - 1\frac{1}{3}$ draw diagrams to

show the 3 whole units and the $1\frac{1}{3}$ units. Take out of the 3 units $1\frac{1}{3}$ units. 1 unit of the 3 must be cut into thirds leaving $2\frac{1}{3}$ taken out of the $3/3$ leaves $2/3$; 1 cut from the 2 whole units leaves 1. The remainder is $1\frac{2}{3}$.



Now if we take the $1\frac{1}{3}$ out of the 3 we have this:

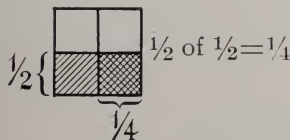


and we have $1\frac{2}{3}$ left.

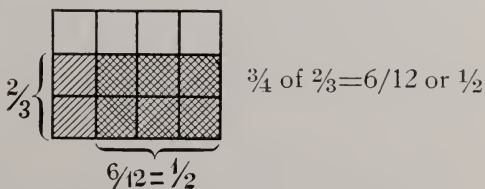
Multiplication of Fractions

It is easy to step from diagrams of the meanings of fractional units to show the multiplication of fractions. In these exercises, show the first fraction in one direction on the diagram and the part of it taken in the other direction. Insist on the pupil writing out each problem and its answer and noting what was done.

To show $\frac{1}{2}$ of $\frac{1}{2}$:



To show $\frac{3}{4}$ of $\frac{2}{3}$:



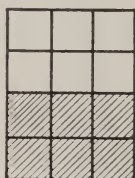
In a similar manner other multiplication of fractions can be shown.

If the attention has been called to the written form connected with the illustrations and the question is raised constantly,

"What did you do to get this result?", many pupils will be able to write out their own rule for multiplying fractions. The slower ones will need prodding with questions but should not be told to multiply the numerators and the denominators. Teachers should not be impatient and try to speed up the work. This is no time for short cuts, cancellation, and the like. Let that follow when understanding is established.

Pupils getting answers such as $6/12$, $4/8$, etc., are ready for drawings to show reduction of fractions.

$6/12 = 1/2$ may be shown:



$$6/12 = 1/2$$

Division of Fractions

The use which most people have for division of fractions in daily life is very limited. In fact, some writers in the field of arithmetic suggest, that as far as utility is concerned, division of fractions might be omitted.

The usual method of teaching children division of fractions is to instruct them to invert the divisor and proceed as in multiplication of fractions. The explanation of *why* this is done is difficult to develop with many children of the grade level in which division of fractions is usually taught.

There is, however, a method which can be explained and illustrated by drawings. It is known as the "common denominator" method and the procedure is as follows:

Whenever the denominations of the two fractions involved in the division problem are alike, the division can be performed by dividing the numerator of the dividend by the numerator of the divisor. For example:

$6/8 \div 2/8$ —simply divide 6 by 2 which equals 3.

In using the "common denominator" method a preliminary exercise should be given to show that as long as the fractional units are the same, the division or measuring of one fraction by another is no different than the division of any two whole numbers.

The use of toy money illustrates this very well.

8 ten dollar bills divided into groups of 2 ten dollar bills.
The quotient is 4.

8 one dollar bills divided into groups of 2 one dollar bills.
 $\$8 \div \$2 = ?$

8 half dollars divided into groups of 2 half dollars.
 $\$8/2 \div \$2/2 = ?$

8 quarter dollars divided into groups of 2 quarter dollars. $\$8/4 \div \$2/4 = ?$

8 tenths of a dollar (dimes) divided into groups of 2 tenths of a dollar. $\$8/10 \div \$2/10 = ?$

8 twentieths of a dollar (nickels) divided into groups of 2 twentieths of a dollar. $\$8/20 \div \$2/20 = ?$

8 hundredths of a dollar divided into groups of 2 hundredths of a dollar. $\$8/100 \div \$2/100 = ?$

In each of these examples the number of units remained the same, although the size of the units changed; but the size of the units in each example was the same in both dividend and divisor. What was true of the quotient? If the size of the fractional units used in both dividend and divisor is the same, then how can you divide these fractional units? (Just as you would divide whole numbers.)

The problem $6/8 \div 2/8$ can be illustrated in this way: Draw a picture of the dividend— $6/8$. Draw a picture of the divisor— $2/8$. Cut out the divisor with scissors. Lay it on the picture of the dividend and see how many pictures of the divisor it takes to cover the picture of the dividend. It takes 3.

Dividend— $6/8$

Divisor— $2/8$

$$\begin{array}{|c|c|c|c|} \hline \square & \text{shaded} & \text{shaded} & \text{shaded} \\ \hline \square & \text{shaded} & \text{shaded} & \text{shaded} \\ \hline \end{array} \div \begin{array}{|c|c|c|c|} \hline \square & \square & \square & \text{shaded} \\ \hline \square & \square & \square & \text{shaded} \\ \hline \end{array} = 3$$

If the problem involves unlike denominators, the fractions must be changed to like denominators before dividing.

A whole number divided by a fraction may be shown.

Problem: $4 \div \frac{2}{3}$. $4 = 4/1$ so we have $4/1 \div \frac{2}{3}$. When we change to like denominators (thirds) we get $12/3 \div \frac{2}{3}$. Dividing 12 by 2 = 6.

Dividend—4

Divisor— $\frac{2}{3}$

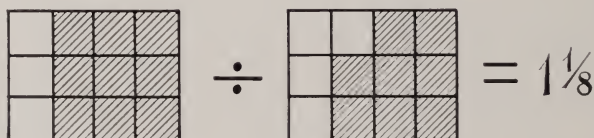


Cut out the four dividend pictures and place them side by side in a row. Now cut out the divisor picture— $\frac{2}{3}$ and lay it on the dividend picture—4. How many times must it be laid down to cover the dividend picture? (6 times.) There are six $\frac{2}{3}$ in 4.

Another example $\frac{9}{12} \div \frac{8}{12} = 9/12 \div 8/12 = 9 \div 8 = 1\frac{1}{8}$

Dividend— $9/12$

Divisor— $8/12$



When the cut out divisor is placed on the dividend we find that it lacks one square of covering it, so we say that in $9/12$ there are one $8/12$ and one square over. This square is $\frac{1}{8}$ of the divisor so there are one and one-eighth $8/12$ in $9/12$.

After the denominators are alike they may be thought of as just a name like *inches* as in 9 inches \div 8 inches = $1\frac{1}{8}$ inches.

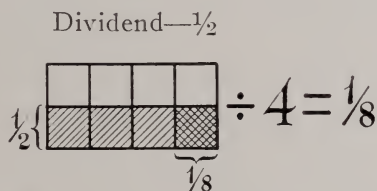
As only two fractions are concerned in a division problem, the changing to a common denominator is a simple affair. In the problem $\frac{5}{8} \div \frac{1}{3}$ for example, 40, the product of the denominators, is the common denominator.

The steps written down as the diagrams are made in such an example as $\frac{5}{8} \div \frac{1}{3}$ are: (1) $\frac{5}{8} \div \frac{1}{3} =$ (2) $\frac{5 \times 3}{24} \div \frac{1 \times 8}{24} =$
(3) $15/24 \div 8/24 =$ (4) $15 \div 8$ or $15/8 = 1\frac{7}{8}$.

Children who have been required to write out each step as they make the diagrams and encouraged to notice what has been done with the figures in each step, are often able to say to the teacher, "I don't have to write out the fractions that way. I just write down $\frac{5}{8} \div \frac{1}{3}$ and then say $\frac{5}{8} \times \frac{3}{1}$." This is the natural way for arriving at such "short cuts". Thus a child may, from his experience with drawing and noting results, arrive at the inversion of the divisor as a way of saving work and time. One boy expressed it, "I just cross multiply."

It will be noted that the above suggestions for explaining the meaning of division of fractions apply only when the dividend in the problem is larger than the divisor. When a fraction is divided by a larger fraction or whole number a different explanation is necessary.

Suppose that four boys have a half watermelon to divide equally among them. What part of a whole melon would each receive? We state the problem $\frac{1}{2} \div 4$ and work it in the same way as we have been doing problems in division of fractions: ($\frac{1}{2} \div 4 = \frac{1}{2} \div \frac{8}{2} = 1 \div 8 = \frac{1}{8}$) The problem can then be shown by a drawing:



$\frac{1}{2} \div 4$ means that when $\frac{1}{2}$ is divided into 4 parts, what part of the whole will each of these four parts be?

The "common denominator" method of division of fractions is longer than the "inversion" method, but since it is more easily understood and since division of fractions as a process is infrequently used by most people, it would seem desirable to at least introduce the work in division of fractions in this way. After much concrete work of this kind some children may be able to understand the "inversion" method if it is presented in a meaningful way.

Meaning and Addition and Subtraction of Decimals and Introduction to Per Cent

Before an understanding of decimal fractions can be developed there must be an understanding of the decimal system

of notation. If the children know the underlying relationships of units to tens, tens to hundreds, hundreds to thousands, and understand it, the teaching of decimal fractions is merely an expansion of that knowledge.

Using toy money is the best means of reviewing their knowledge, clearing up faulty ideas, and establishing an understanding of the number scale and its extension to the right of the decimal point.

Give to pupils standing in front of the class representations of \$1000, \$100, \$10, and \$1 bills, arranging them with the largest bill on the left, so that the numbers appear as they look on the board.

Have each pupil tell what his bill is and how many it takes to make one of the next larger bill.

"It takes 10 of my \$1 bills to make a \$10 bill," etc. Then reverse the order, "My \$1000 equals 10 of the \$100 bills," etc. Then go through again giving the fractional part. "My \$1 is $1/10$ of the \$10 bill," etc. Have a pupil write on the board in order of size beginning with the largest, the bills shown, arranging them to add: \$1000

$$\begin{array}{r} 100 \\ 10 \\ 1 \\ \hline \$1111 \end{array}$$

Begin at right and pointing to the units say, "The one in this column is $1/10$ of the 1 on the left." Continue until the thousands column is reached and then reverse, saying: "The 1 in the column on the left is 10 times the 1 in the next column on the right," etc.

Now have a pupil stand and hand him a dime. "What part of the \$1 bill is your coin? As it has the same relationship to the \$1 as we have shown before, where should it stand? But if it is placed one column or one place to the right of the 1 in the units column, it makes the unit look like a ten and it reads 11 instead of 1 unit and 1 tenth of a unit. How can this be remedied?" Show the end of the whole number and the position of the units column just as you show the end of a sentence in English. A period placed at the right of a figure always indicates the position of the units column. Have a child represent-

ing the decimal point stand between the units and the tenths children.

Give another pupil a penny. "Where should you stand to show the relation of your coin to the dime? What part of a dime will that position represent?" If you are fortunate enough to have tokens which are $\frac{1}{10}$ of a cent, you can continue this to the thousandths column. Name over the relationships of the units in columns to the right and left with the addition of the tenths, hundredths, and thousandths. This arrangement will now add up to \$1111.111.

Conclusion: A unit on the right is always one tenth of one unit on the left. One unit on the left is always ten times one unit on the right.

Using Squares to Show Decimal Parts of a Whole

Cut out of half-inch squared paper two 10 by 10 squares. Have the pupils divide one of these squares into 10 strips and color in one strip.

"How can you represent the whole square by using numbers?" The whole square is 1.

"How can you indicate that this 1 is considered to be in the units column?" This can be shown by putting a period to its right (1.). "This period is called a decimal point. It is not necessary to put the decimal point down when the whole or unit has not been divided but it is always understood to be there."

"One strip is $\frac{1}{10}$ of one whole square. As a decimal we write it .1. The decimal point in front of the 1 shows that the number is in tenths column—the column next to units column which is always to the left of the decimal point. If I wish to represent 1 whole square and one of the strips on another square, how can it be written?" (1.1) "If I have 1 square and 2 strips, how should it be written?" (1.2) "Can you write how we represent just 5 of these strips without a whole square with it?" (.5)

"Write down in a column: .2, .4, .3, .6. Add these. What is the sum? (1.5) How shall we write it? This shows that we have enough tenths to make 1 whole square and .5 more. Now add .1, .2, .3, .4. What have we now? 1.0 or just enough to fill the square with no tenths over. How many tenths is it?" Read this in two ways—ten tenths or one and no tenths.

Problems based on reading automobile meters may be introduced here with interest to the pupils.

Note: If emphasis has been previously placed on the fact that only like units may be added or subtracted, there should be no difficulty in teaching addition and subtraction of decimal fractions. Only tenths can be added to tenths, hundredths to hundredths, so these units must be kept in their correct columns, with tenths under tenths, hundredths under hundredths. If care is taken in writing these down in straight columns, the addition or subtraction is exactly the same as the adding of units to units, tens to tens, etc., in whole numbers. "If the numbers are correctly written where will your decimal points fall?"

Showing Hundredths as a Decimal Fraction

Great care should be used to give the pupils a clear understanding of the hundredth and its relation to the whole and to other fractional units, for it is the most important of all the decimal fractional units. It is the basis for work in per cent.

As soon as the children can see and write hundredths, they should be introduced to expressing these hundredths in per cent as just another way to write hundredths. Example: "Write one hundredth in all the forms that you know." (.01, $1/100$, 1%, one hundredth.)

Such an early introduction and understanding of the use of the term per cent does much to remove the difficulty of its later uses.

A large square meter drawn on the board for reference in moments of uncertainty is a constant help. On it can easily be shown the thousandth and the ten-thousandth part, their relationship to the whole, and to the other parts.

Color in a long strip showing one tenth of the square. Divide another strip into ten small squares and color in one of the small squares to show one hundredth of the unit.

When ready to drill on the thousandth, divide a small square into ten strips and color one strip to show one thousandth.

When ready to talk about ten-thousandths divide the thousandth into ten tiny squares and color them in alternating colors so that they may be counted easily.

As each of these parts is added to the large square, exercises should be given to show the relation of the new division to the whole and to each other.

The pupils should point out on the large square, decimal fractions dictated by the teacher and by other pupils, and have another pupil write them on the board in figures. These figures can be used later as problems in addition and subtraction of decimal fractions.

Multiplying Decimal Fractions

Multiplication of decimal fractions is very easily demonstrated with the squares.

Multiplying a Decimal Fraction by a Whole Number

Show on the large square on the board one square equalling .1. Count off three of these squares (.3). Outline the three squares in colored chalk. Say, "If we take five groups of three squares each, how many squares will we have? How many tenths will that be? Write it." Have the children count off the five groups of squares. "This is the same as multiplying $.3 \times 5 = 15$ tenths or 1.5. We can write the problem this way:

$$\begin{array}{r} .3 \\ \times 5 \\ \hline 1.5 \end{array}$$

Give a number of such examples. "What conclusion do you reach? If tenths are repeated a certain number of times or multiplied by a whole number the product will be *some number of tenths*." Do the same with hundredths and then with thousandths.

"What conclusion do we reach when we are multiplying a decimal fraction by a whole number? The product will contain the same decimal fraction as the number multiplied and will have the same number of decimal places."

Multiplying a Whole Number by a Decimal Fraction

Two-tenths of 2 can be shown by dividing two squares into ten small squares each and shading four of them. "In taking a decimal part of any number of whole units, what do you notice about the product?"

Multiplying a Decimal Fraction by a Decimal Fraction

Show on the large square on the board one-tenth of the square. Show one-tenth of this tenth. "What is it called? One-tenth of one-tenth is one-hundredth." Write this in figures on the board $.1 \times .1 = .01$

$$\begin{array}{r} .1 \\ \times .1 \\ \hline .01 \end{array}$$

Similarly show .1 of .2; of .5; of .7; writing each problem down on paper.

Now show .2 of .3; .4 of .6; .7 of .3; .9 of .9. Write down each problem in the two forms. $.2 \times .3 = .06$ and $.2 .9 \times .9 = .81$

$$\begin{array}{r} .3 \\ \hline .06 \end{array}$$

$$\begin{array}{r} .9 \\ .9 \\ \hline .81 \end{array}$$

"What conclusion do you make? Tenths of tenths always give hundredths. How many decimal places in each factor? How many in the product?"

Similarly problems should be given showing tenths of hundredths; tenths of thousandths, and hundredths of hundredths. Enough of these should be given and the written forms observed so that the pupils will be able to make the rule for pointing off the product for themselves. Repeat often such questions as: "A tenth of a tenth is what? A tenth of a hundredth is what? A hundredth of a hundredth is what?"

Care must be taken that the pupils understand how to point off in such a problem as .03 of .04. The importance of the zero as a "place holder" and the counting of the places from the right hand side must be carefully noted.

If the understanding of per cent as a different way of writing hundredths had been made clear in previous exercises, such problems as finding 6% of \$1000 may be given, emphasizing that the 6% must be written in its decimal form when used in multiplying.

Dividing Decimal Fractions

Pre-requisites to Teaching Division of Decimals

1. Review of the relation of units to tenths, to hundredths and to thousandths and vice verse.
2. A knowledge of how to multiply by ten, one hundred, one thousand (the powers of 10), quickly and easily by moving the decimal point.
 - a. Write down a list of numbers, such as :

No.	$\times 10$	$\times 100$	$\times 1000$
17.5			
60			
.25			
1.25			
.725			

- b. Multiply and write the answers down in the columns indicated.
 - c. Observe what happens to the decimal point as you multiply. Where was it in the first number? How far has it moved in multiplying by 10? How far when you multiplied by 100? By 1000? Give practice exercises.
 - d. Make a rule for multiplying by powers of 10.
3. Make a similar table for division by powers of 10, and require an expression of the rule. Give practice exercises.
4. Show that in placing the figures in the quotient the figure for each partial division is placed directly above the column being used.

Dividing Decimal Fractions

Introduce the division of decimals by using toy money to show by partition that dimes divided into groups give dimes as a quotient, and cents divided into groups give cents as a quotient.

8 dimes divided into 2 groups equals 4 dimes. $\$.8 \div 2 = \$.4$

$$\begin{array}{r} .4 \\ 2 \overline{) .8} \end{array}$$

12 dimes divided into 4 groups equals 3 dimes. $\$1.2 \div 4 = \$.3$

$$\begin{array}{r} .3 \\ 4 \overline{) 1.2} \end{array}$$

Show by dividing into groups that dimes divided into groups of dimes gives a whole number and cents divided into groups of cents gives a whole number. Reviewing the fact learned in division of fractions that when the fractional units are alike, they are divided just as if they were whole numbers.

6 dimes divided into groups of 3 dimes = 2 groups.

$$\begin{array}{r} 2. \\ \$.6 \div \$.3 = 2 \quad .3 \overline{) .6} \end{array}$$

15 dimes divided into groups of 5 dimes = 3 groups.

$$\begin{array}{r} 3. \\ \$ 1.5 \div \$.5 = 3 \quad .5 \overline{) 1.5} \end{array}$$

Work with problems of this type show that:

1. When tenths or hundredths are divided by a whole number the quotient contains the same number of places as the dividend.
2. When tenths or hundredths are divided into groups of the same fractional units the quotient is a whole number.

Review the facts taught through the use of toy money by using ten unit squares. Cut off a certain number of tenths, as .2 from a square, and use it as a measure of the whole square. $1 \div .2 = 5$. "How do we know this? One equals 10 tenths, write

5.

ten $1.0 \quad 1.0 \div .2 = 5 \quad .2 \overline{) 1.0}$." Similarly use .25 and .025 as meas-

4.

40.

ures. $1 \div .25 = .25 \overline{) 1.00} \quad 1 \div .025 = .025 \overline{) 1.000}$

"Copy the following examples:

$$\begin{array}{r} 6. \quad 60. \quad 600. \\ 500 \overline{) 3000} \quad 50 \overline{) 3000} \quad 5 \overline{) 3000} \\ 6000. \quad 60000. \quad 600000. \\ .5 \overline{) 3000.0} \quad .05 \overline{) 3000.00} \quad .005 \overline{) 3000.000} \end{array}$$

Write down the quotients in the correct columns above the dividends."

Observe: "How does the divisor change in these examples? How does the quotient change? Write down what you observe."

1. The smaller the divisor the larger the quotient.
2. If the divisor is one tenth as large, the quotient is ten times larger.
3. When the decimal point in the divisor is moved one place to the right, the divisor is one tenth as large and the quotient will be ten times larger.
4. When the decimal point in the divisor is moved 2 places to the right, the divisor is one hundredth as large. The quotient will be 100 times larger.
5. When the decimal point in the divisor is moved three places to the right, the divisor is one thousandth as large and the quotient will be 1000 times larger.
6. When the divisor is a whole number, where is the decimal point placed in the quotient? (Directly above its position in the dividend.)
7. If the divisor is one tenth as large how will the answer or quotient be changed?
8. How can this be done quickly? This may be shown by placing a carat (\wedge) to mark the position *if* the divisor were a whole number, then crossing out the decimal point in the dividend and multiplying by 10 by moving the decimal point one place to the right.

$$\begin{array}{r} .25 \\ 5 \overline{)1.25} \end{array} \qquad \begin{array}{r} 2.5 \\ .5 \overline{)1\wedge 2.5} \end{array}$$

Compare: $5 \overline{)1.25}$ and $.5 \overline{)1\wedge 2.5}$

9. Similarly moving the decimal point two and three places respectively to multiply the answer by 100 or 1000 should be brought out; because the position of the decimal point in the divisor indicates that the answer will be 100 or 1000 times larger. Practice exercises should be given until skill is developed.

This method is a compromise between the mechanical moving of the decimal point in both dividend and divisor and the attitude that no rule for placing the point should be given—that it should be placed by common sense estimate of the probable size of the quotient.

In all use of illustrative material the point of the work is lost unless the pupils write down the steps used, observe what was done in using the illustration or diagram, and what computations were made with the figures corresponding to the changes made. Frequent oral expression by the pupil is needed to assure that he is really noting results and understanding them. When enough work has been done for the pupils to formulate a rule of procedure, it should be stated by the pupils, the expression improved by criticism of the other members of the group, and finally written down.

A little notebook in which the students may write down "Things to Remember" is a help in fixing points of importance and is useful for reviewing them.

Measures

Make liberal use of concrete illustrations—objects, drawings, and the like. Have the children experiment with the various measures. Measure the room, halls, playground, etc. Encourage them to bring in measurement problems from home. Utilize opportunities for using and teaching measurements which arise in school activities. Make all work meaningful.

Commercial

Relate this work to the activities of children in the home, community, and school. Use real things—sales slips, bills, receipted bills, checks, deposit slips, etc.¹

A school store project or a school bank offers opportunities for developing commercial concepts and practices through actual experience. The school store or bank may be a play project, or better, it may resemble as nearly as possible the real thing. The store may sell school supplies and the bank may accept real money on deposit. Depositors may write checks to pay for supplies bought from the school store, keep a record in the correct manner of their deposits and checks, and compare these records with their bank statements at the end of each month.

Note: If a banking project is carried on it is best to use materials—deposit slips, checks, etc.—made by the children and bearing the name of the school bank. Do not use checks on a

¹It is probably not advisable to use real checks for practice in check writing—use check forms made by the children. Real checks may be brought to school for demonstration purposes.

"real" bank. Children should learn that a check, properly written, calls for payment of money, and that checks carelessly handled may fall into the hands of dishonest people. It is important that children learn, through a banking project, the *right* way to engage in this type of business, and that they develop the right kind of business ethics.

Graphs, Maps and Scale Drawings

Much of the work in reading and constructing graphs may be done in connection with keeping individual and class records of test and drill exercise scores and handling statistical data in social studies, current events, science, etc. Map work is closely related to social studies and the need for drawing to scale often arises in many of the activities of the school.

Problem Solving

Problems should be as childlike and as real as possible. Encourage the children to bring problems from home. Work and explain some of these problems in class. If processes are involved which have not yet been taught, the teacher may work and explain them or they may be omitted. It is probably a good thing for children to be exposed to processes some time before they are ready to learn them. Such exposure, if accompanied by discussion and explanation, may actually help in developing readiness for that process.

The problems which children work at their seats without the benefit of discussion and explanation should *not* involve facts or processes which have not been taught.

Failure on the part of children to understand written problems is a frequent cause of their inability to solve them. The following suggestions on this point may be helpful.

1. Have many "reading lessons" from the arithmetic texts, the objective being to develop the ability to read the problem and tell:
 - a. Whether it is a one-step or a two-step problem
 - b. What fundamental operation is used in each step
 - c. What the estimated answer will be

Note: These lessons are "reading lessons" and are conducted without the use of paper or pencil.

2. Have many language lessons in which the child sets up in clear-cut language a number of:
 - a. One-step problems
 - b. Two-step problems
 - c. Sentences showing an understanding of arithmetic vocabulary
 - d. Problems without numbers
3. Have two-step problems read silently and the two steps given in order.

Note: These problems may be based upon pupil activities or community interests.

GRADES SEVEN AND EIGHT

If previous teaching and learning have been effective, most pupils entering the seventh grade should have a reasonable degree of mastery of the four fundamental processes with whole numbers. They have applied these same processes to fractions, both common and decimal. While complete mastery of all of these processes will not have been achieved, most pupils will at least be conversant with the methods to be employed in the solution of more or less simple problems and exercises involving the use of them.

Most seventh and eighth grade children are ready, more than at any previous time, to consider the social implications of what they have learned. Of course good teaching has utilized these implications all the way up through the grades, but now the field is vastly expanded keeping pace with the awakening social consciousness. The scope of the problems calling for mathematical skills which began in the home, school and community are ever widening and now extend to national and even international affairs. Thus the applications of mathematics are multiplied many fold.

Complete mastery of the fundamental processes can never be assumed but must be worked on from day to day. However, the major emphasis in these grades should be on the application of these skills and abilities to the everyday social life of the community, state and nation. Now as before the pupil's number skills and concepts must be given significant meaning.

Continued emphasis should be placed on understanding of the processes used. The children are now more mature and may be able to sense relationships which have previously not been apparent. Thus one of the objectives in seventh and eighth grade arithmetic is to coordinate and unify the pupil's understanding of arithmetic.

Since mathematics invades every realm of human activity, the teaching of arithmetic also furnishes unlimited opportunity for correlation with other subjects in the school curriculum. The need is also present to correlate the arithmetic with social and business activities outside the school. The relation of the bank to community life; taxes and local, state and national affairs; installment buying and loan companies; parcel post and federal ownership; stocks and bonds and big business; the income tax and national revenue;—these are but a few of the limitless number of opportunities to give arithmetic a practical and indeed universal application to almost every field of human enterprise. Arithmetic in the seventh and eighth grades is to a great extent a content subject.

The opportunity to relate arithmetic and other school subjects is also ever present. The study of the circle and circular measurement correlates with latitude and longitude in geography; the drawing, reading and interpretation of graphs should be related to the graphs studied in social science; percentages may be applied in the study of imports and exports in geography; and language functions in the solution of written problems. Many other correlations will be apparent to the alert arithmetic teacher. It is these applications of the theories that make arithmetic real and alive to the pupil.

However, there are certain phases of the arithmetic in these two grades which can scarcely be justified on the basis of present use or worth. Such subjects as car, fire, and life insurance; stocks and bonds; taxes; etc., can only be justified by the fact that they will be of immense value in the life of the pupil at a not too far distant time. It is on this basis that their inclusion in the content of the course of study is justified.

While the ability to reason things out does not spring suddenly into full bloom, the seventh and eighth grades do furnish the best opportunity thus far afforded to emphasize the reasonableness of arithmetic and mathematics in general. Short-cuts and easier methods help to awaken and sustain interest. Too

often pupils have the idea that there is only one acceptable way to work a problem when there may be a dozen different ways any one of which may be acceptable. This is reflected in the comment of so many parents that "We can't help our child because you do things so differently now from what we did when we went to school." Too much emphasis has been placed on a method rather than on the principles involved. Pupils should be encouraged to use imagination and ingenuity and not be required to conform to a standard pattern.

The seventh and eighth grade course in arithmetic should emphasize the social applications and implications of mathematics. It cannot effectively function as an abstract subject. It must also afford abundant practice in the use of the fundamental processes, aiming always at as close to 100% accuracy as is humanly possible to achieve. It must broaden the whole subject of mathematics keeping it a vital, interesting, and very necessary part of living in our social order.

Suggested Content—Grade Seven

Numbers

Read large numbers as round numbers (Example: 4,561,425 as $4\frac{1}{2}$ million)

Addition and Subtraction

1. Continue practice on addition and subtraction
2. Give some practice with numbers larger than those used in preceding grades

Multiplication and Division

1. Continue practice on multiplication and division previously taught
2. Give some practice with numbers larger than those used in previous grades

Fractions

Continue practice on the four processes with fractions

Decimals

1. Continue practice on the four processes with decimals
2. Read and write decimals to millionths
3. Add and subtract decimals to ten-thousandths
4. Multiply decimals to ten thousandths in the product
5. Divide decimals to ten thousandths in the quotient

Percentage

1. Meaning of per cent
2. Table of aliquot parts as per cent
3. Case I per cent (finding a per cent of a number)
4. Case II per cent (finding what per cent one number is of another)

Measurements, Geometric Figures, and Algebraic Concepts

1. Continue work in measurements of previous grades
2. Perimeter and area of parallelogram and trapezoid
3. Lines (parallel, perpendicular, and oblique)
4. Angles (acute, obtuse, right); parts of triangle; use of protractor
5. Area of triangles
6. Introduction of algebraic concepts

Commercial

1. Family budgets and bookkeeping
2. Promissory notes
3. Simple interest
4. Commercial discount
5. Commissions

Graphs

Circle and picture graphs

Ratio¹**Suggested Content—Grade Eight****Number**

Continue practice in reading and writing large numbers and in expressing large figures in round numbers

Addition and Subtraction

Continue practice on addition and subtraction

Multiplication and Division

Continue practice on multiplication and division

¹An understanding of ratio forms the basis for Case II per cent, therefore ratio should be taught before this topic in per cent is introduced.

Fractions

Continue practice on four processes with fractions

Decimals

1. Continue practice on four processes with decimals
2. Change fractions to decimals by dividing the numerator by the denominator
3. Express remainder in division as a decimal

Percentage

1. Continue work with per cent previously taught
2. Case III per cent (finding the number, of which a given number is a certain per cent. Example: 50 is 25 per cent of what number?)
3. Change decimals to per cent

Measurement, Geometric Figures, and Algebraic Concepts

1. Acre and section
2. Board feet in buying lumber
3. Area of a circle
4. Area of cylinders and prisms
5. Area of cone, pyramid, and sphere
6. Volume of cylinders and prisms
7. Volume of cone, pyramid and sphere
8. Metric system¹
9. Bisecting angles
10. Similar triangles
11. Perpendiculars
12. Rule of Pythagoras (Square root by inspection)
13. Algebraic concepts—the use of the equation in problem solving

Commercial

1. Compound interest (use of tables)
2. Bank discount

¹It is not necessary to develop a complete understanding of the metric system or work problems involving metric measurement. It is sufficient for pupils to know that this system of measurement is used in some foreign countries and in scientific work. They may be shown the principle upon which this system is based.

3. Cashiers, certified, and travelers checks and post office and express company money orders
4. Insurance (life, fire, theft, liability, etc.)
5. Taxes (property: valuation, rate, etc.; income, sales, excise taxes; tariff; etc.)
6. Corporations (what they are)
7. Stocks and bonds
8. Building and loan associations and the F. H. A.
9. Cooperatives (marketing and consumer)
10. Installment buying

Ratio and Proportion

Suggested Procedures and Other Aids for Teaching

Diagnostic Review

This review of the fundamental operations with integers, fractions, and decimals must be diagnostic in character. In arithmetic as in all school subjects, the range of achievement between the lowest and highest groups may amount to a difference of several grade levels. Each individual must be taken where he is and his difficulties straightened out before he is ready to take up advanced work. Most books give an introductory diagnostic or inventory test. This should be given, the results carefully studied, and such remedial work planned as is necessary.

Particularly must this review be very comprehensive in the matter of decimals. It may be and probably will be necessary to go clear back to the underlying principles of the number system and thoroughly review the addition, subtraction, multiplication, and especially the division of decimals. The teacher must always point out that decimals are simple common fractions expressed in a new and oftentimes more effective way. It may even be necessary to have a little review on common fractions before the decimals can be attacked. Why the decimal point is handled as it is in the different processes needs to be explained to the pupils.

Along with the review of the meaning of decimals, re-introduce the meaning of per cent, emphasizing that per cent is just another way of writing hundredths. Since the meaning of

per cent was introduced late in the sixth grade, it is reasonable to expect that the pupils have forgotten much of what they learned about it.

Per Cent¹

Expanding the Idea of Per Cent

After the introduction of the meaning of per cent as a new way to write hundredths of a whole in the early work in decimals, it is natural to begin a review of this idea with the squares used in connection with the work in decimals.

The points to be reviewed and expanded by numerous exercises are:

1. Writing decimals as per cents
 - a. Hundredths as per cents: $.75=75\%$
 $.03=3\%$
 - b. Tenths, changed to hundredths and per cents:
 $.2 \quad .20 \quad 20\%$
 $1.5=1.50=150\%$, etc.
 - c. Thousandths as per cents:
 $.125=12.5\%$ or $12\frac{1}{2}\%$; $.025=2.5\%$ or $2\frac{1}{2}\%$
2. Writing per cents as decimals
3. Changing per cents to decimal fractions and reducing to common fractions
4. Find a per cent of a number, recalling and emphasizing that the per cent must be changed to a decimal fraction before multiplying.

A variation in review may be provided by using gummed reinforcements colored in different colors on a square divided into 100 parts to show different per cents of the whole. Coloring parts of the square also shows the relation between the per cents and their fractional equivalents.

In connection with this work stress the point that one per cent (1%) is always one part of a hundred parts of one whole or a number of things considered as a whole. 25% is .25 or $\frac{1}{4}$ of 1 whole; but the whole may be 1 foot or 12 inches, 1 ton or 2000 pounds; 1 pound or 16 ounces; but still it is 1 part out of

¹The suggestions on teaching per cent were contributed by Elizabeth Kendel, Colorado State College of Education, Greeley.

100 parts of whatever is considered a unit or whole thing. This is an important point for an understanding of reducing fractions to decimals and per cents.

Changing Fractions to Per Cents

To understand changing from fractions to per cents, the pupil should be able first, to change any whole number to a decimal with a clear idea of what he is doing in adding zeros to the right of the decimal point; second, he should know that $\frac{1}{4}$ of 3 is the same as $\frac{3}{4}$ of 1, $\frac{1}{8}$ of 5 is the same as $\frac{5}{8}$ of 1.

Armed with these understandings, the change of $\frac{3}{4}$ and $\frac{5}{8}$ to hundredths and per cents is a simple matter. $\frac{3}{4} = \frac{1}{4}$ of 3.
 .75

$3 = 3.00$; $\frac{1}{4}$ of $3.00 = 4 \overline{)3.00}$.75 may be written as 75%

Later he should observe that since $3 \div 4$ may be written $\frac{3}{4}$, all he has to do is to write this down in division form, add the necessary zeros and divide. He should learn the equivalents in per cents of the commonly used aliquot parts.

Exercises in reducing fractions to their per cent values form the basis for the second case of percentage, "finding what per cent one number is of another".

Second Case of Percentage

This work should be preceded by learning to compare numbers by division, which is ratio. Comparing large numbers brings up the need for knowing how to round off numbers so that unnecessary work in dividing very large numbers can be avoided. That the quotient will be accurate to the second or third decimal place if the numbers are rounded off to three or more significant figures can be proved by dividing such numbers in the original and in the "rounded-off" numbers.

Ratio as the comparison of numbers by division is very important in the solution of many problems in the advanced work in percentage, especially in its application in business arithmetic, in the understanding of similar triangles, in the exploratory work involving the tangent, and in the study of data for making graphs. Hence, careful comparisons of many kinds should be made with concrete, and semi-concrete materials and drawings should be used to insure the child's comprehension that

ratio is the measuring or dividing of one number by another. Examples:

1. \$10 compared with \$2 is 5 times as much or $10/2=5/1$ or 5. This may be written as $10\div 2$, $10/2$, $10:2$ and may also be read 10 to 2 or the ratio of 10 to 2 equals the ratio of 5 to 1.
2. \$10 compared with \$20= $10/20$ or $\frac{1}{2}$ which may be written $10\div 20$ or $10/20$ or $10:20$ and read the ratio of 10 to 20 is 10 to 20 or 1 to 2.

Comparisons of lines of different lengths, the shadows and heights of objects, and many other examples should be used.

Once the idea of ratio as a comparison by dividing is grasped, finding what per cent this year's corn crop is of last year's, or the comparison in per cent of the yield of sugar beets in Colorado with that of Wyoming is not difficult.

Third Case of Per Cent

Problems dealing with finding a number when a certain per cent of it is known are very infrequent in life situations. This process can be taught best after the simple equation has been introduced in algebra. It is a very simple thing when given in equation form and much time is saved for the slower pupils by delaying its presentation until they can use the division axiom in solving simple equations.

If the presentation of this problem is required, the simplest way is to find what 1% equals and then find the 100%. Example:

1. 4% of a number is 16. What is the number? Since 4% of the number is 16, 1% will be $\frac{1}{4}$ of 16 or 4. 100% is $100\times 1\%$ ($100\times 4=400$). The number of which 4% is 16 is 400.
2. A building is insured for \$4800 which is 60% of its value. What is the valuation of the building?
 60% of its value=\$4800
 1% of its value= $1/60$ of \$4800=\$80
 100% of its value= $100\times \$80$ =\$8000

By observing the numbers used, the students can see that to divide 16 by .04 or \$4800 by .60 will give the same result.

Measures, Geometric, and Algebraic Concepts

Every attempt should be made to see that the pupil's knowledge of measures and geometric terms and figures is not an abstract one. There are too many ever-present illustrations of the facts and figures concerned to ever rely entirely on book problems. The area of the school room, the window space, the amount of blackboard, the area of the tennis court, the baseball or football field, the foul circle on the basketball floor—all these and many more furnish opportunity for practical applications of the formula under consideration.

Particular pains must be taken to see that the pupils have a very real meaning of what area and volume are. What seems so apparent to the teacher is often not comprehended by the pupils as is evidenced by the trouble they have in labeling answers as linear, square, or cubical.

A real understanding of geometric figures is not gained from definitions or pictures but only by experience and actual contact with them. This phase of the work must be very real or it will be worthless to the pupil.

Models of the figures presented aid materially in developing understanding. These models such as rectilinear solids, cones, spheres, pyramids, cylinders, etc., can be purchased from most school supply houses, or many of them can be constructed from paper, cardboard, or tin. One teacher had a tinsmith make to his order several figures for classroom use.

The area of a circle should be taken with particular attention given to the meaning of the "square" of a number. Care should also be taken that the pupil understands just what "area" means and why it is always measured in square units.

Some work in actual construction should be done. A protractor, compass, and ruler are all the equipment needed. Such constructions as erecting perpendiculars, bisecting lines and angles, drawing triangles given any three parts (except angles) arouse interest in geometric form as well as in construction in general. The construction of triangles should lead to the conclusion that the angles of a triangle always total 180 degrees.

The pupils should also become familiar with the Pythagorean theorem. In order to solve simple problems in right triangles, they will need some work in square root. The actual teaching of how to extract square root need not be taught but the pupil

can easily learn to approximate the real root of numbers between 1 and 10,000. The use of the radical sign must be understood.

If area has been effectively taught, finding the area of the lateral surfaces of prisms will involve little difficulty. A knowledge of the volume of a rectangular solid forms the basis for understanding volumes of other solid figures. Care must be taken that the pupil has a clear idea of volume and understands just why it is measured in cubic units.

The introduction of similar triangles and the subject of indirect measurement will entail the teaching of simple ratio and proportion. Such a consideration need not be involved, but just enough may be given to enable pupils to solve elementary problems in indirect measurement. Actual experience in the solving of such problems will arouse interest and open up a new field of interest and a new field of mathematics.

Commercial

Budgets and Home Bookkeeping

The introduction of budgets and home bookkeeping may be related to the problem which the children are meeting of making an allowance or the money they earn cover the expenses which they have to meet. Through this approach it is easy to show the advantages of planning expenditures and keeping track of how money is spent. This may be expanded to include a study of family budgets, stressing the wise distribution of income to cover expenses. Suggested family budgets may be procured from life insurance companies, the Extension Division of the State College of Agriculture and Mechanic Arts, and other sources. These may be studied to see the recommended relative distribution of family income.

Making the family income cover necessary expenses may lead to a study of ways of saving money and may involve such topics as sale and cash discounts, cash and installment buying, and the like.

The advantages and disadvantages of installment buying must be brought out so that the pupils will understand just what they are paying for. Actual cases and advertisements of time payments on such articles as bicycles, washers, radios, etc., should be studied to emphasize just what installment buying entails. Simplified problems should be used in figuring just what rate of interest is paid in each case.

Banking

The function of the bank in community life, the use of checks and its advantages, keeping of the stubs, pass books, and deposit slips should be reviewed. In addition some time should be spent on the safe sending of money by mail. This would include some discussion of Post Office Money Orders, cashier's checks, certified checks, bank drafts, and possibly the use of travelers checks.

Compound interest is introduced for the first time and the emphasis is placed upon how it works rather than on the solving of problems. Any problems that are solved should be very simple and used only to show how it functions. Complex or long problems should be solved by the use of interest tables. Samples of these tables should be procured and explained.

Promissory notes should be reviewed and bank discount introduced. Loan companies should be discussed and the rates of interest figured. Actual rates charged can be found in almost any daily paper.

In addition to the above topics, the service fees charged by local banks should be investigated. Among other things, the pupils should understand just why these fees are charged, how much they are, and how average monthly balances are determined. They should also understand why there are charges for cashing out of town checks and any other facts which may be peculiar to the local banking situation. These are the types of information which will undoubtedly be of immense value to the pupil in his future dealings with banking institutions.

Insurance

Here again, the informational and factual material to be considered are of more value than the actual mathematic skill or processes involved in the figuring of the annual premium or the loan value of the policy. The social import of insurance should be brought out as well as an understanding of the commonly used terms. Premium, mortality tables, dividends, loan values, and cash surrender values should be discussed. The common types of policies—term, paid up and endowment policies are the most common. Very little actual problem solving is really necessary, perhaps just enough to bring out the difference in rates for the three types. The use of certain kinds of policies as investments as well as insurance should be pointed out.

Fire insurance and some of the commoner provisions of fire insurance policies should be touched upon. Just why rates may be different in different localities should be determined.

In view of the prevalence of traffic accidents it would seem advisable to teach some of the benefits and provisions of automobile insurance. The terms, fire and theft, collision, property damage, and public liability should be discussed to insure the pupil's understanding of just what each division includes.

In insurance as in taxation, the pupils should be taught that insurance is simply a cooperative effort wherein the group of policy holders pool their risks and the insurance company acts as their agent.

Taxation

The pupils should learn the principles and vocabulary of taxation and the understanding of each. Such terms as assessed valuation, rate, real estate, real value, personal property, exemptions, etc., are essential to an understanding of taxation. The three ways of stating tax rates as mills per dollar, dollars per thousand, and dollars per hundred of assessed valuation should be discussed and some problems, not too involved, solved in order to keep the subject from being purely theoretical. Actual tax receipts will vitalize the subject. The pupils should be led to see that all taxes are a cooperative effort to provide services impossible for the individual to provide for himself.

The principles underlying the income tax should be clearly understood as an attempt to tax the citizen according to his ability to pay. It also serves as an opportunity to consider the sources of federal income. Blanks are readily obtainable to impress upon the pupils the meaning of exemptions.

Sales, cigarette, amusement, luxury, gasoline, and liquor taxes should be mentioned in the light of the ends to which the revenue is put.

While few pupils will ever have the duty of figuring any actual tax bills, an understanding of the processes involved in fixing the tax rate and the amount of the individual tax bill is necessary to an understanding of the very vital subject of taxation. This unit is primarily informational and factual rather than mathematical.

Business

It is essential that the pupils learn just how businesses are organized. He should learn the meaning of charter, stock certificates, bonds, corporations, par value, dividends, coupons, common and preferred stocks, market value, and other terms that are associated with modern business. Practice should be given to see that he understands these words. If possible it is well to show the pupils actual stock certificates, bonds, etc. The daily stock and bond quotations in newspapers can be used to make the study more real.

The idea of profit and loss should be developed through discussion and solution of simple problems within the child's experience.

Cooperative buying and selling organizations such as a potato growers' marketing associations and consumer cooperatives are worthy of study. Material on these types of organizations will not usually be found in arithmetic texts, but first hand information can be obtained from the organizations themselves if there are any in the community.

One teacher carried out an interesting activity in which the class organized a stock company to operate a school supply store. Shares of stock were sold and the money used to open the business. A board of directors was elected, the business opened, and run as much like a real business as possible. At the end of the first half year, profits were figured, dividends declared, and the company dissolved.

The next semester the class organized itself into a consumer cooperative for the same purpose. This time profits were distributed on the basis of purchases made rather than money invested.

Through these two activities the organization and functions of these two types of business were made real to the pupils.

Building and loan associations should receive considerable attention since such a big per cent of home ownership is acquired through this medium. Almost any town of any size has its building and loan associations and its purposes can be made more vital by discussing its methods of working. The closer home the illustrations come, the greater is the interest of the pupil. The part which the Federal Government plays in financing home ownership should be stressed.

Graphs

The use of graphs is daily becoming more common. Scarcely a magazine or paper can be found which does not have graphic illustrations in them. Pupils should learn to read and interpret such graphs accurately. Pupils should understand that graphs are used principally to make numbers more interesting and the facts they show more striking.

Graphs from newspapers, geographies, social science books, magazines, etc., should be collected and discussed. The construction of simple bar and line graphs will furnish opportunity for the application of the percentage which has been learned. Graphs of attendance by rooms, daily fluctuations in temperature, and test scores are some of the common ways that graphs can be fitted to the pupil's needs and interests.

Neatness, as well as accuracy, must be stressed. It is better to have no graph at all than one untidily done.

EVALUATING THE PUPIL'S WORK

In order to carry on a sound testing program it is necessary to recognize the purposes in arithmetic. In addition to the computational aim in arithmetic instruction, it is today realized that there are other outcomes desired, such as a liking for and an appreciation of arithmetic and the social significance of quantity. It would be impossible to test the appreciative aspects of arithmetic in the same formal manner that the computational skills can be tested. An adequate evaluation of the pupil's work in arithmetic involves the following: (1) informal observation of the pupil's progress, (2) frequent testing of the pupil's progress, and (3) the use of standardized tests to determine the pupil's skill and power in computation and reasoning.

The teacher who stresses the importance of understanding has ample opportunity to observe the progress of each pupil. In an informal manner the work is planned and conferences are held both with the group and the individual. Teaching of this type brings the pupils and the teacher in close relationship in solving problems. Desirable attitudes, appreciations, ideals, and social qualities, as well as computational power, become the dominant aims. It can readily be seen that this type of evaluation is informal and continuous and is a natural outgrowth of the class procedure.

The checking of results through teacher made tests of the drill or inventory type is a common means of evaluation. Testing of this type should be frequent. One of the usual weaknesses of the testing program is the failure to follow up processes that have been taught. It is advisable to test each process before going to the next. Caution should be observed in constructing these tests in order not to include difficulties which have not previously been introduced. Many textbooks include tests prepared by experts. These tests should be used in conjunction with teacher made tests.

Present standardized tests in arithmetic are largely limited to the measurement of skill and power in computation and to the solution of reasoning problems. The forms of standardized tests are diagnostic and survey, the latter including both the computational and reasoning forms. It is their purpose to determine the total attainment of the pupil and to diagnose his particular weaknesses. Since they are not constructed to test all the aspects in arithmetic they should be used as only one phase of the testing program.

It is desirable, at the beginning of each year's work, to test pupils on the most important aspects of the arithmetic which has been taught previously. Most texts contain inventory tests for this purpose. The follow-up work consists of re-teaching those facts and processes in which weaknesses are shown. The teacher must remember that in arithmetic, effective learning of new processes often depends upon how well previous processes have been learned. Much difficulty in arithmetic is experienced by pupils who attempt new processes before having understood or developed skill in using processes on which the new depend.

SUGGESTED ADAPTATIONS OF THIS PROGRAM TO SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

During recent years there has been a marked development in the type of program used in the small rural school. Formerly the teacher held a series of short recitations calling each group in turn to the front for a brief period of testing or discussion followed by an assignment by the teacher after which the pupils returned to their seats for a period of study in preparation for next day's lesson. Thus it continued throughout the day. The program stressed recitation. The new program stresses individual study, discussion, and activity.

It has been found that there is economy of time and energy in having the entire group in a one room school working at the same time on the same type of activity. Therefore, it is well for the teacher in this type school to devote an hour or whatever time he feels is needed to the arithmetic period during which the entire enrollment will be concerned with activities involving numbers. Much of the work will be carried on as individual projects; however, for the sake of interest and economy of time it is well to group together as many students as possible. The teacher during this period will supervise the individual study, give aid where it is needed and call one or more groups for testing, discussion, or for the purpose of introducing a new process. There is no set allotment of time for any child or group. The teacher endeavors to meet the needs of the students as they arise and devotes whatever time is necessary to this purpose. When beginning new subject matter, sufficient time should be utilized to develop an understanding of it.

Since it has been found that the grouping of children by grades is artificial and that we may find in any grade pupils on several levels of achievement, the teacher in the small school has the opportunity by means of individual work to have each child work up to his ability. It may even be advantageous to form groups across grade lines in order to economize in time and care for individual differences.

To be more concrete, the arithmetic program for a day might unfold as follows: The first few minutes of the period might be utilized by the teacher in introducing an activity for the beginners. While he is managing this, the older pupils begin their work where they had left off on the previous day. The second grade may be doing work which had been put on the blackboard or solving problems in their workbooks. When the teacher has completed the activity assignment for the first grade, and while they are working on it, he gives his attention to the older students. His work with them may consist of individual or small group help on difficulties, or the introduction of a new procedure to a small group which is ready for it. He may wish to call some group together for a discussion of the practical applications of the process on which they have been working. While this discussion is proceeding, one group may be doing a test and another working toward mastery through

intensive drill. Thus each student is busy on a learning activity in arithmetic suited to his ability and his accomplishment.

Under this type of program the teacher must be a master technician for he must so arrange assignments and guide activities that all groups do not need his lengthy attention at the same time. He must plan so that only two or three groups will need extended help during any one day. The other groups will be pursuing drill, taking tests, or applying their learning to problems for which they have been already prepared.

For the smaller children there should probably be daily class work but this should be short, well planned, and with a definite end in view. The teacher should then utilize the remaining time among his older pupils directing their study, meeting the difficulties which have appeared, or introducing a new process.

The teacher will find it very helpful to plan assignments or units well in advance. A unit should not include more than one process, and often a process should be divided into two or more units. Some units should be review work designed to maintain skills already developed. These may be placed on the blackboard or written out on paper and given to the pupils as they become ready for them. If two or more pupils are working on any given unit at the same time duplicate copies of that unit will be required. These unit sheets may be kept and used from year to year.

After a pupil or a group complete a unit some check should be made on the work. Often the text being used contains tests suitable for this purpose. The teacher should check these tests and follow with whatever re-teaching is necessary. The pupils may check their own practice work, using answer books, if the teacher does not have time to do it.

A record of the units completed should be kept for each child. The teacher may keep such a record for the entire school and each child may keep his own individual record of progress.

An occasional period for a discussion of the applications of arithmetic in daily living should be included in the program. Several grades may participate together during such a period. Problems which have arisen in school, at home and in the community may be brought in, discussed, and solved. Some time may be given to a discussion of our number system, how it originated, its convenience, and what would happen if we were to suddenly forget all we know about number.

This type of program stresses learning rather than recitation. It demands that the teacher be alert and have the ability to meet the difficulties of her pupils as they arise. It utilizes individual work yet gives opportunity for grouping whenever two or more children can work together to advantage.

SPECIAL HELPS IN TEACHING ARITHMETIC

Individual Differences

Before taking up new work in arithmetic it is extremely important that the child understands and has had opportunity to practice what has gone before. Many difficulties in arithmetic arise because of failure to observe this principle.

Children vary greatly in readiness for the various aspects of arithmetic and in their rates of learning when they do become ready. It is therefore very necessary that the arithmetic program be set up in such ways as to allow children to progress in accordance with their abilities.

Perhaps no other subject lends itself as well to a modified form of individual work as does arithmetic. A completely individualized technique is not desirable, but a combination of group and individual work can be carried on very effectively.

If all children work on arithmetic during the same period, small groups can be formed of those ready or about ready for the same new process and of those who are having similar difficulties. These groupings will not remain constant but will vary as some children forge ahead or as variations in the types of difficulties appear. Neither will all children work in groups at the same time—many will be engaged in individual work.

It is possible to do this type of work without supplementary materials by allowing the children to progress through their books each at his own rate. Dividing the work into units of related material, including in these units direction to the pupils, helps and explanations, etc., will result in much better work and will free the teacher from having to answer so many questions regarding how the children are to proceed.

There should be a definite check on the pupil's work by means of a test on each unit. Most text books contain tests which may be used for this purpose. The teacher should check these tests and weaknesses shown should be given special attention. Each child should learn to check his own practice work.

During the arithmetic period the teacher meets with groups, introducing new work and helping to clear up misunderstandings, and also works with individual children.

Some system of keeping a record of the child's progress should be used. The child may keep a record card on which he marks the date on which certain work has been completed, together with the score which he made on the test. The teacher may keep a record card on which the dates and scores of units completed are kept for the entire class. Occasional reference to this record will indicate which children are not making progress and such cases may be given special attention.

The relative amount of time given to group and individual work will vary with the children and the type of work being studied. Much of the work in grades seven and eight, especially that dealing with such topics as insurance, taxes, corporations, etc., calls for discussion and group activity. On the other hand, multiplication of whole numbers, while demanding group work in presenting each new step, requires much individual work in the practice necessary to approach mastery of the process. It is also desirable to provide for an occasional period when problems which children have brought from home or those which have arisen in school are discussed and solved by the group. All children will not be ready for the processes involved in some of these problems, but most of them can profit from the discussions and explanations. When these children later come to problems of the same kind in their textbooks they will already have had some contact with them.

The inexperienced teacher should probably not attempt this type of program all at once but should work into it gradually. Perhaps, he should start with a few groups and later, as he feels more sure of how to proceed, expand to both group and individual work.

It is not the intention to convey the idea that the suggestions given above outline a rigid plan for teaching arithmetic. No one method meets all situations or all needs. The teacher must evolve his own way of doing things in keeping with his own personality, the needs of the children, and the limitations of the particular situation. The main point to keep in mind is that children should not be forced into learning situations for which they are not ready.

Diagnostic and Remedial Work

If the program in arithmetic is suited to the needs and abilities of the children few serious remedial cases should develop and there should be no need for a "remedial program" apart from the regular work in arithmetic. Good teaching makes constant use of diagnosis of difficulties and re-teaching where weaknesses are shown and does not wait for serious problems to develop before doing something about them. In this way diagnosis and remedial work are a part of the regular teaching program.

Most texts have many diagnostic tests which are very useful in finding out where teaching and learning have not been effective. It is often helpful in discovering specifically what is wrong to sit down with a pupil and ask him to think out loud what he does in working a problem. This procedure gives the teacher an insight into the mental processes which the pupil uses, which might never be discovered in class work, and enables him to correct incomplete and erroneous thinking.

Difficulties in arithmetic may arise from:

1. Lack of mental maturity necessary for understanding
2. Lack of an experience background necessary for understanding
3. Poor teaching in which understanding was not developed
4. Advancing to new processes without understanding what came before
5. Failure to relate the work in the text to life situations
6. Lack of mastery of number facts (May be due to lack of understanding and meaningful practice)
7. Lack of interest (Often due to lack of understanding and consequent unsuccessful experiences with numbers)

When difficulties exist, procedures call for finding the difficulties, discovering its causes, removing those causes if possible, and re-teaching.

Maintaining Skills

The basis for skill is understanding and purposeful repetition. Purposeful repetition depends to a great extent on the need for using the particular process in which we wish to develop skill. Many of the processes taught in arithmetic are

used so little in the life of the child that they are quickly forgotten. Some authorities suggest that we are still teaching at each grade level much arithmetic the use for which is too remote.

If skills developed are to be maintained practice must be provided. Often there is a loss in skill in the four processes in whole numbers in the seventh and eighth grades. This loss may be due in part to the fact that so much new content is introduced in these grades that little time is given to maintaining skill in adding, subtracting, multiplying, and dividing whole numbers. Exercises in these processes at intervals through these grades coupled with emphasis on their application in new work should do much to prevent this loss.

Utilizing the Environment of the Child

Number facts and processes remain the same regardless of the environment but the application of these facts and processes should at first be to those things which are familiar to the child. For example, if the peck is a measure in common use in the community, beginning problems in measure may involve pecks. But if pecks are practically unused, as in Colorado, measure introduced through pecks would be meaningless. Later, Colorado children may and probably should learn that there is such a thing as a peck and that it is used as a measure in some parts of the United States.

Problem Solving

Some of the difficulties which children encounter in the solving of verbal problems may be traced to:

1. Insufficient mental maturity for understanding
2. Lack of background (Problems deal with things the child knows nothing about)
3. Lack of understanding of the vocabulary used
4. Inability to read with meaning
5. Lack of any method for attacking a problem
6. The problems themselves—may be poorly stated from the standpoint of sentence and paragraph construction, catch problems, unreal problems (don't make sense—answer must be known before problem could be stated), problems about things outside the child's experience, and problems involving processes which the child has not been taught

7. Lack of sufficient mastery of number facts and processes to compute accurately

As an aid in developing problem solving ability:

1. Problems should be real, childlike, well stated, and should involve only those processes which have been taught
2. The number of steps involved should be in keeping with the maturity of the children (Two step problems do not belong in the first grade)
3. Children should have help in developing a method of attack. This method might include the following or similar steps:
 - a. What does the problem ask?
 - b. What facts does the problem give us which we need in order to find the answer to the question which the problem asks?
 - c. Are there facts given which we do not need in finding the answer?
 - d. Are there some facts which we will need which are not given?
 - e. What will we do to find the answer—what processes will we use?
 - f. What would seem to be a reasonable answer? (Write it down.)
 - g. Solve the problem and compare the answer with the estimated answer. Is the answer reasonable?

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FINE ARTS IN THE ELEMENTARY SCHOOL

Every person today is a consumer of the products of the fine arts. We cannot use the most ordinary objects of our daily living without being aware of line, color, and design. This consumption increases directly with the general culture and standards of the people. The public school affords the best opportunity for developing intelligent consumers of fine art products.

But there is another very vital reason for the teaching of the fine arts in the elementary school. Every child needs an emotional outlet. He should be encouraged to create and to experiment in those lines where spontaneity and free play of the imagination predominate. Whether he ever becomes a poet, musician, or painter is immaterial. By gaining first-hand experience with the various media he is able to appreciate the fine workmanship of artists.

Moreover, the teacher frequently encounters pupils with real gifts for creative work. A child with talent should be given an opportunity for development in his special field. A general fine arts program discovers special aptitudes and makes provision for their encouragement.



An attractive library corner helps to stimulate interest in free reading

THE PROGRAM IN LITERATURE

WHY LITERATURE SHOULD BE TAUGHT

Since good literature represents the highest form of the written expression of the race, experiences in good literature should be a part of every child's heritage. Such experiences are essential to his well-rounded development. The specific purposes for which literature should be taught are:

1. To give pupils a wide variety of interesting, vital experiences, interpretations of life, and understandings of human relationships and of character development
2. To help pupils understand the peoples of other countries and races as well as of their own (For example, recent juvenile literature about life in South America, Central America, and Mexico should do much toward establishing, wholesome Pan-American relationships.)
3. To enable pupils to enjoy leisure time profitably
4. To satisfy the reader's different moods through vicarious experiences
5. To give pupils an intelligent understanding of literary references met with in reading, in listening over the radio, and in conversation
6. To enable pupils to give pleasure to others through oral reading
7. To enable pupils to read aloud for their own enjoyment such material as poetry and drama

HOW LITERATURE MIGHT FUNCTION IN OTHER ACTIVITIES

It is desirable to have some of the literature work for each grade integrated with the programs in social studies, science, health, art, and music. For example, the biography of a great musician might well be read to pupils just before or after they have enjoyed his music. The reading of stories and poems about Swiss life might well parallel a unit on Switzerland in social studies. Literary selections should in no way be limited to such integrations, however. Most literary selections should be read

primarily for their own sake. They need not necessarily bear any relationship to any other part of the school program. On each grade level pupils should be encouraged to read stories, poems, plays, biographies, and other literary materials in many different fields. To confine their reading to selections related in content to other school work defeats many of the aims of the program in literature.

A SUGGESTED LITERATURE PROGRAM BY GRADES

GRADE ONE

Suggested Outcomes for Pupils of Average Ability by the End of Grade One

1. A genuine interest in listening to stories and poems read aloud
2. A genuine interest in reading silently simple stories
3. A knowledge of fifteen or more stories and as many poems which have been read to the pupils
4. A knowledge of five or more books which have been read independently by the pupil
5. Ability to read orally a simple short story or parts of a story so that it is understood and enjoyed by an audience. The material read should be prepared in advance through silent reading and some practice in reading aloud. Most first-grade pupils are unable to do sight reading orally
6. Ability to repeat from memory three or more favorite short poems
7. Ability to dramatize simple stories

Suggested Procedures and Other Aids for Teaching

The teacher should read some good literature to the pupils every day. Care should be taken to see that the first books read independently by pupils are primarily picture books and that no new reading difficulties are encountered.

Dramatizations should be very informal; no set parts should be learned. Pupils should give a spontaneous interpretation of the characters. Interest is added by having some dramatizations in which simple puppets made of cardboard or wood to repre-

sent the characters are used while various pupils read or speak the characters' parts.

A reading club in which pupils read aloud to each other, or to parents and other school visitors, helps to stimulate interest in literature.

GRADES TWO AND THREE

Suggested Outcomes for Pupils of Average Ability by the End of Grade Two

1. Further development in all attitudes and skills listed for first grade
2. Knowledge of twenty-five or more stories and as many poems which have been read aloud to the pupils
3. Knowledge of ten or more books read independently by the pupils
4. Ability to repeat from memory four or more favorite poems in addition to those learned in first grade
5. Habit of taking books home to read
6. Knowledge of how to get books from the nearest library

Suggested Outcomes for Pupils of Average Ability by the End of Grade Three

1. Further development of all attitudes, habits, and skills suggested in grades one and two
2. Knowledge of thirty or more stories and as many poems which have been read aloud to the pupils
3. Knowledge of fifteen or more books read independently by pupils
4. Ability to repeat from memory four additional favorite poems
5. Ability to recommend a good book to the class giving the title, author, and a brief statement of what the book is about
6. Ability to read very simple poetry orally, not as sight reading but after preparation

Suggested Procedures and Other Aids for Teaching

Pupils should be urged to read during leisure time at school and at home. Provision should also be made for recreatory reading periods during school hours. Care must be taken to see that

books, magazines, etc., chosen for independent reading are suited to the pupil's reading ability. They should be very easy. Individual and class records showing books and poems read will encourage independent reading.

The teacher should continue reading some good literary selection to the pupils daily.

GRADES FOUR, FIVE, AND SIX

Suggested Outcomes for Pupils of Average Ability by the End of Grade Four

1. Further developments of all habits, attitudes, and skills suggested for the preceding grades
2. Habit of always keeping a good book on hand to read during leisure time (No specific number of books to be read is stated here, but each pupil should be urged to read as widely as possible.)
3. Habit of noticing authors of books and poems
4. Habit of reading magazines and parts of the newspaper
5. Ability to repeat from memory four or more additional favorite poems

Suggested Outcomes for Pupils of Average Ability by the End of Grade Five

1. Further development of the work begun in the preceding grades
2. Ability to recommend a book, summarizing the content so as to stimulate others to read it and the ability to write a brief book review for a class book review file or scrap book
3. Habit of browsing at the library and independence in selecting material for leisure reading
4. Increased interest in types of reading other than fiction (For example, books of travel, biography, science, current events, etc.)
5. Ability to enjoy reading poetry independently
6. Ability to recite from memory four or more favorite poems learned during the year

Suggested Outcomes for Pupils of Average Ability by the End of Grade Six

1. Further development in all habits, attitudes, and skills taught during the preceding grades
2. Skill in making brief book reviews orally and in writing
3. Ability to recite from memory four or more favorite poems learned during the year

Suggested Procedures and Other Aids for Teaching

The intermediate grades should be a period of wide reading. Every effort should be made to stimulate pupils to read many different types of materials on varied subjects. The keeping of a class file or scrapbook of brief book reviews written by pupils similar to the review shown in the Program in Composition encourages pupils to read widely.

Training in the use of the library should be given. At this level pupils' attention should be called to the authors of their favorite books. Class and individual records of books read add interest and promote leisure reading.

Pupils should be stimulated to read at least one magazine and one daily newspaper regularly.

The teacher should continue reading to the pupils at least three times a week.

GRADES SEVEN AND EIGHT

Suggested Outcomes for Pupils of Average Ability by the End of Grade Seven

1. Further development of work begun in the preceding grades
2. Skill in reading newspapers and magazines
3. Rapid increase in the amount and quality of reading done
4. Ability to write from memory at least four favorite poems learned during the year

Suggested Outcomes for Pupils of Average Ability by the End of Grade Eight

1. Further development in all work taught during the preceding grades
2. A beginning interest in adult literature
3. Skill in using the library

4. An interest in the lives of authors of favorite books
5. An interest in the style of writing of authors of favorite books
6. Ability to recite from memory at least four favorite poems learned during the year

Suggested Procedures and Other Aids for Teaching

This is a period of refinement of tastes in reading. Effort should be made to help pupils arrive at standards which will enable them to decide what is good and what is bad literature. These standards must be built up through reading widely, and through intelligent discussion of what constitutes good literature. They cannot be dictated to pupils and be effective. Pupils should be encouraged to express frankly their opinions concerning books read. A wide choice in the selection of material should be permitted.

EVALUATING THE PUPIL'S WORK

It is not necessary to test pupils on the literary selections they read. Such informal tests as are given should deal with the pupils' general reactions to the selection and their opinions concerning the characters and incidents of the story rather than with detailed knowledge of the contents. Some standardized achievement tests include tests of general information in literature. They are not essential.

SUGGESTED ADAPTATIONS OF THIS PROGRAM FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

Certain types of literature lessons such as oral reading to the class by the teacher or a pupil, giving book reviews, free reading, and dramatizations may be enjoyed by all of the pupils in a classroom working or listening together.

For such types of lessons as group study of a selection and the memorization of poetry, the following groupings are suggested: First, second, and third grades working together; fourth, fifth, and sixth grades working together; seventh and eighth grades working together.

SPECIAL HELPS IN TEACHING LITERATURE

Suggested Classroom Procedures for Teaching Literature

Teaching literature involves very different procedures from that of teaching the work-type of reading. The literature teacher

is not directly concerned with teaching pupils reading skills, but rather with teaching them appreciations, developing their taste for good reading, and with providing them with rich vicarious experiences. The chief aims in the literature period are best accomplished by exposing pupils to the best available literary selections which are suited to their ages and abilities. If these aims are to be realized each pupil must relive in his imagination the story, the incidents, or the thoughts portrayed in the material he is reading. Any teaching which helps the pupils to feel, enjoy, and live through the events, feelings, and descriptions of the selection is good teaching; and any teaching procedures which hinder them are poor. Below are described various types of lessons or classroom procedures which are in keeping with the main purpose of literature.

Oral Reading to the Class by the Teacher

There should be many lessons of this type, not only in the primary grades but in the intermediate and junior high school classes as well. The usual procedure is somewhat as follows:

The teacher states the title of the selection and with older pupils the name of the author also. She then builds up whatever background is necessary to the proper understanding of the selection. If the selection is well chosen this introduction is usually very brief. The selection is then read to the class. Care should be taken that it is well read. Pupils should be permitted to ask questions and make comments, provided such remarks do not hinder the thought of the selection. After the reading, opportunity should be given for a brief discussion. If pupils do not enter spontaneously into this discussion, it should be dropped. There should be no quizzing, or retelling, or testing over the material. Selections chosen for this type of lesson should be of real literary merit and should usually be those which pupils cannot read easily themselves. Above the third-grade level a selection may be of such length that only a part of it is read each day for several weeks.

Audience Oral Reading by Pupils

In this type of lesson only the pupil reading has a copy of the selection. The rest of the class listens. Care must be taken that the reading is reasonably well done. Unless the selection is very easy, it should not be attempted as sight reading, but should be prepared in advance.

Sometimes it is advisable to have a small committee of pupils select and prepare to read in turn to the class some story or poem or group of poems. The preparation should be done as work-type reading and the presentation as literature.

Opportunity should be given for different pupils to read parts of favorite stories or poems to the class, or one class may read to another.

Spontaneous comments and questions on the part of the class should be encouraged, but no formal check-up on thought should be attempted.

Group Study of a Selection

Duplicate copies of literary readers or children's classics are essential for this type of lesson. In general the procedure should be somewhat as follows:

The teacher through discussion or story telling builds up a background for understanding the selection to be read and creates an interest in reading it. Each pupil is given a copy of the selection which he reads silently at his own rate, closing his book when he has finished and doing some other work until all the members of the group have finished reading it.

Opportunity is then given for informal discussion of the characters, incidents, and setting of the selection. Pupils should be encouraged to be frank and honest in expressing their opinions. No test on thought should be given; the teacher or pupils may call attention to parts of unusual beauty or interest.

Free Reading

In this type of lesson each pupil is allowed to browse through the books and magazines available, choose one, and read it silently at his desk during the entire period. The teacher should offer assistance in the selection of material, in the pronunciation and meaning of words, or in clarifying the thought when pupils request it or give evidence of needing it. Many periods should be devoted to this type of lesson.

Book Reviews

The purpose of book reviews should be to acquaint the pupils with available books and to stimulate them to read widely. Book reviews should never be made as proof that pupils have done assigned readings. A book review which inspires listeners to want to read the book is not easy to make and cannot be done

impromptu. The review might well be prepared during the composition period and given to the class during the literature period.

In preparing the book review the teacher and pupils together should work out a set of standards or points to be considered in recommending a book. The following outline was made by a fourth-grade class.

How to Recommend a Book

- I. Selecting a book
 - A. Choose a story most members of the class will like
 - B. Choose a story that most of the pupils have not read
- II. Preparing the report
 - A. Plan to fit the amount you tell to the time that you are allowed (not over five minutes)
 - B. Choose only the most interesting parts to read or tell briefly
 - C. Use a marker to help you find the places to read
 - D. Practice making your report at home if possible
 - E. Be able to pronounce all the words
- III. Giving the report
 - A. Hold the book up so that all may see it
 - B. Tell the name of the book and of the author
 - C. Tell the kind of story it is or any interesting item to catch the interest of your audience
 - D. Tell where one may get the book
 - E. Have a good sitting or standing posture
 - F. Speak so everyone can hear you
 - G. Look at your audience while you speak and read
- IV. Judging the success of the report
 - A. Did the audience appear to enjoy it?
 - B. Did the audience ask any questions about the story?
 - C. How many children expressed a wish to read the book?
 - D. Did your recommendation find a reader?

In giving a report, pupils should be seated so they can see and hear each other easily. Each pupil in turn makes his report and gives an opportunity for members of the class to ask questions. It is probably unwise to make any correction of speech errors at this time. At a later composition period, or immediately following the book review, pupils and teacher should have a discussion of "How Can We Make Our Book Reports Better?"

Recommendation of Books to the Class by the Teacher

In this type of lesson the teacher reviews briefly one or more books suitable for the class, thereby building up an interest in the selected books and stimulating pupils to want to read them. Books of the non-fiction type as well as fiction should be included.

Reading and Memorizing Poetry

In general, poetry should be read to pupils by the teacher, using the same procedure as for any other type of literature. It should be so presented that the rhythm and beauty of wording are enjoyed. While most poetry should be read aloud, some very easy selections should be read silently by pupils during the free reading period.

Suggested Poems by Grades

Grade One

Stevenson	—My Shadow
Taylor	—Twinkle, Twinkle, Little Star
Stevenson	—Swing
Field	—Why Do Bells for Christmas Ring?
Alexander	—All Things Bright and Beautiful
From the German	—Sleep, Baby, Sleep
Cooper	—Come, Little Leaves
Stevenson	—Rain
Rosetti	—Wind
Stevenson	—Autumn Fires
Tennyson	—Bird and the Baby
Brown	—Little Plant
Milne	—Hoppity
Lindsay	—The Moon's the North Wind's Cooky

Grade Two

Longfellow	—Hiawatha's Childhood
Ingelow	—Seven Times One
Lear	—The Owl and the Pussy Cat
Cary	—Suppose
Stevenson	—Wind
Houghton	—Lady Moon
Larcom	—Brown Thrush
Child	—Thanksgiving Day
Field	—Rock-a-bye Lady
Stevenson	—Land of Story Books
Sherman	—Daisies
Field	—Dutch Lullaby
Kingsley	—Lost Doll
Stevenson	—Windy Nights
Miller	—Blue Bird
Allingham	—Fairies
Field	—Duel
Coleridge	—Answer to a Child's Question
Sherman	—Four Winds
de la Mare	—The Cupboard
Lear	—The Table and the Chair

Grade Three

Longfellow	—Children's Hour
Brooks	—O Little Town of Bethlehem
Rands	—Great, Wide, Beautiful, Wonderful World
Moore	—Visit from St. Nicholas
Longfellow	—Hiawatha's Sailing
Jackson	—September
Hogg	—Boy's Song
Krout	—Little Brown Hands
Cary	—November
Field	—Norse Lullaby
Allingham	—Wishing
Aldrich	—Marjorie's Almanac
Bjornson	—Tree
Tennyson	—Owl
Fyleman	—The Fairies
Milne	—Halfway Down

Grade Four

Longfellow	—The Village Blacksmith
Jackson	—October's Bright Blue Weather
Longfellow	—The Arrow and the Song
Tennyson	—The Brook
Bryant	—Robert of Lincoln
Thaxter	—Sandpiper
Lowell	—First Snowfall
Riley	—Brook Song
Field	—Night Wind
Gould	—Frost
Tate	—Christmas
Lowell	—Fountain
Wordsworth	—Lucy Gray
Gifford	—Moon Folly
Riley	—An Impetuous Resolve

Grade Five

Longfellow	—Paul Revere's Ride
Whittier	—Barefoot Boy
Hermans	—Landing of the Pilgrims
Whittier	—Barbara Frietchie
Morris	—Woodman, Spare That Tree
Longfellow	—Day Is Done
Bryant	—Planting of the Apple Tree
Whittier	—In School Days
Longfellow	—Old Clock on the Stairs
Shakespeare	—Under the Greenwood Tree
Carlyle	—Today
Whittier	—Corn Song
Bryant	—Gladness of Nature
Jackson	—Down to Sleep
Emerson	—Fable
Roberts	—Christmas Morning
Daly	—Between Two Loves

Grade Six

Wordsworth	—I Wandered Lonely as a Cloud
Tennyson	—Sir Galahad
Tennyson	—Charge of the Light Brigade
Drake	—American Flag
Longfellow	—Builders
Tennyson	—Break, Break, Break
Tennyson	—Bugle Song
Cary	—Nobility
Aldrich	—Before the Rain
Wolfe	—Burial of Sir John Moore
Noyes	—The Highwayman
Housman	—The Loveliest of Trees

Grade Seven

Longfellow	—Building of the Ship
Holmes	—Old Ironsides
Bryant	—To a Waterfowl
Miller	—Columbus
Emerson	—Snowstorm
Macauley	—Horatius
Taylor	—Song of the Camp
Browning	—Home Thoughts from Abroad
Lowell	—Fatherland
Holland	—Gradatim
Lowell	—Yussouf
Millay	—Ballad of the Harp Weaver
Peabody	—House and the Road

Grade Eight

Scott	—Breathes There a Man
Kipling	—Recessional
Holmes	—Chambered Nautilus
Whitman	—O Captain! My Captain!
Bryant	—Thanatopsis
Whittier	—Snowbound
Lowell	—Day in June
Shakespeare	—Mercy Speech
Sill	—Opportunity
Gray	—Elegy Written in a Country Churchyard
Burns	—For A' That and A' That

Shelley	—Cloud
Holmes	—Last Leaf
Shakespeare	—Polonius to Laertes
Pierpont	—Warren's Address
van Dyke	—America for Me
Kipling	—Ballad of East and West

A part of our literature is so fine in thought and so beautiful in form that it should be memorized to be fully enjoyed. While no child should be forced to memorize a poem, the teacher should present the poem so thoroughly and in such an interesting manner that pupils will want to memorize it. Only favorite poems of the pupils should be selected for memorization. The following procedure is recommended, although it will vary somewhat with the grade and with the poem:

The teacher introduces the poem so as to arouse interest in it. She then reads the whole poem aloud to the class.

The poem is read a second time to the class, the pupils being told to listen for some points not noticed before.

A pupil who reads well is then asked to read the poem or parts of it to the class, emphasizing certain points. Two or three other pupils read the poem in turn, each one being asked to read it so as to bring out some interesting phase of the story, or description, or humor, or ways in which the words and the meaning are alike, etc.

The teacher reads the poem through again, asking pupils to repeat with her the parts they know. This may be done several times until all pupils are familiar with it.

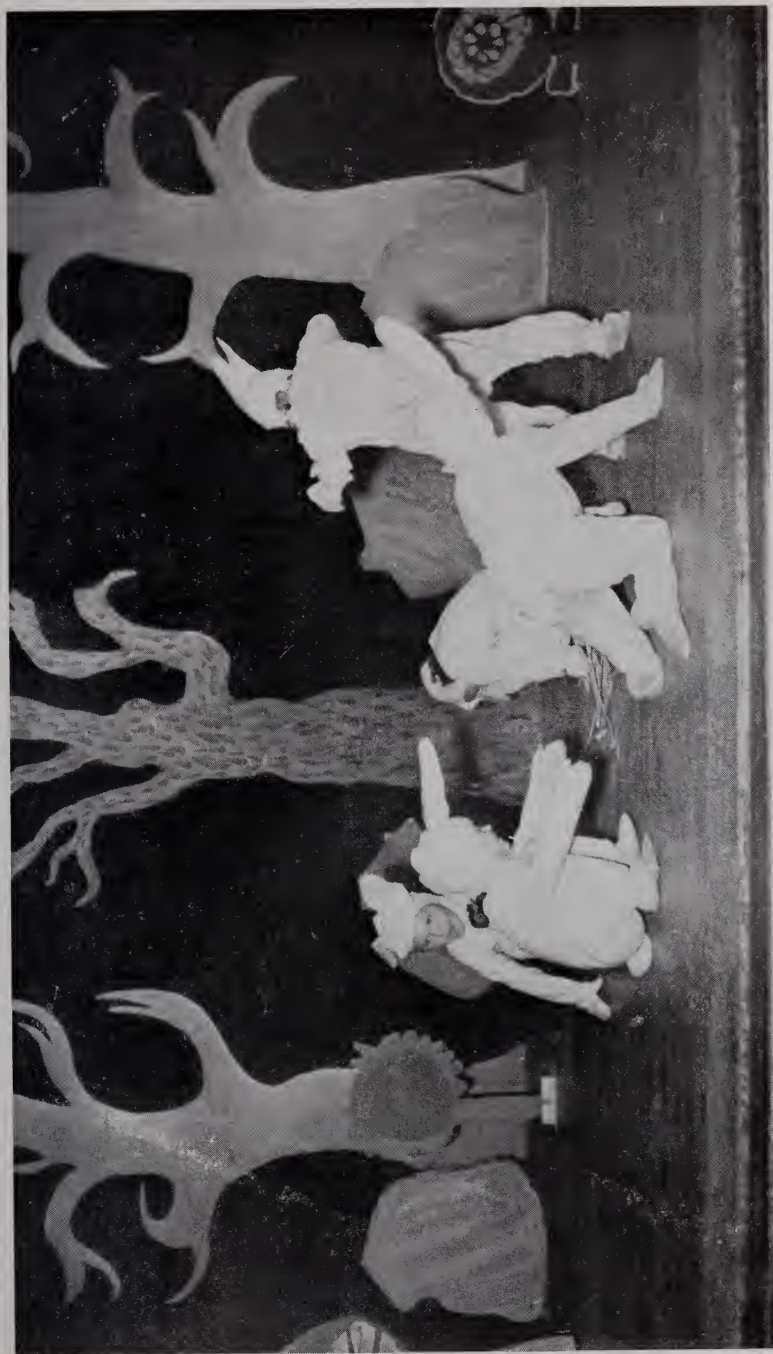
Several pupils are then asked to repeat in turn the parts they know, or like especially well, etc. The teacher then suggests that each pupil read the poem silently from his book or the blackboard, then try saying parts of it softly to himself and reading only the parts he cannot remember.

Teacher and pupils repeat the poem in concert.

Following the lesson, opportunity should be given during the next few days for the pupils to recite the poem together, and to other classes.

Choral Reading

Some poems have such delightful rhythm that boys and girls enjoy reading them aloud in concert. In this reading, pupils



Sharing reading experiences with others through creative dramatics

should be shown how to emphasize the rhythm and the beauty of wording of the lines and also the spirit of the poem. In teaching children to do choral reading, the teacher or the class will need to select a leader to beat time for the group so that all pupils will say each word together. It is sometimes wise for the teacher to write accent marks above certain words in the poem as an aid to pupils in doing choral reading.

Singing Poetry

Many of our most beautiful poems have been set to music. Whenever possible pupils should be taught to sing favorite poems, especially lullabies and ballads.

Dramatization

The following types of dramatization are suggested:

The most common type is probably the dramatic reading of a selection by a group of pupils, each pupil representing a character in the story by reading that character's part. When the story is not all in dialogue form, a story teller may be selected to read or tell connecting parts. Careful preparation should precede the reading before an audience.

Pupils may wish to dramatize a story, either by rewriting the story in the form of a play, memorizing the parts, and acting them, or by planning the actions and general ideas expressed by characters and making up the actual lines as the story is played. The latter plan is recommended.

Puppets may be made to represent the characters in a dramatization.

For upper-grade pupils suitable plays may be purchased, parts assigned and memorized, and the whole play produced for an audience. This type of dramatization may be more interesting to the audience but it is probably not as valuable to the players as the more creative types.

In no case should pupils be expected to put on a finished performance. The dramatization, including costumes and stage sets, should represent the pupils' own work under guidance and should be simple.

The Selection of Books

Instead of purchasing one copy for each pupil of several different sets of supplementary readers, the teacher should buy

many different books. It is desirable to have one complete set of literary readers for each grade, but it is absolutely essential to have single copies of many different books dealing with a variety of subjects and containing different types of selections. In selecting single copies of books for children's reading the following points should be considered:

The books should be well written and of literary value. They should be attractive in appearance, yet durable.

The books should not be too difficult for the pupils to read with ease. Since pupils in any grade vary widely in reading ability, the books purchased for a given grade should be of different degrees of difficulty. In general, it is better to buy books that are too easy to read rather than too hard.

The books must deal with subjects that are of interest to pupils. A wide variety of subjects should be represented in the book list. Some of the books, but by no means all of them, should deal with subject matter which correlates with other school subjects such as history, geography, and science.

The list should contain many different types of literature, such as poetry, short stories, books of fiction, etc.

A suggestive buying list for small elementary school libraries has been compiled by the Library Extension Division of the State Library, Denver, Colorado, and may be secured free upon request. The Reading Circle Committee of the Colorado Education Association publishes each year a list of books recommended for children's reading. Lists of approved books for children are published yearly by the American Library Association and are available in most libraries. Each publisher of children's books will furnish free upon request an illustrated catalog of the library books for children which that firm publishes. An excellently annotated and illustrated bibliography of children's books called *Reading for Fun* is published by the National Council of Teachers of English, 211 West Sixty-eighth Street, Chicago. It costs only twenty cents. For the most recent books for children, teachers are urged to write to the Junior Literary Guild, Garden City, New York, for a catalog of books and for information concerning the various services of the Literary Guild. These services include a monthly magazine of book reviews for boys and girls called *Young Wings*.

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THE PROGRAM IN ART

WHY ART SHOULD BE TAUGHT

The program of the modern school is directed toward providing experiences for boys and girls which enable them to live richer and fuller lives. Through experiences in the arts, children may develop understandings, appreciations, and skills which contribute to this kind of living. The trend in art education today is to stress the place of art in the total environment. If we accept this point of view, the emphasis in art instruction will be placed on the contribution which art makes to useful and enjoyable living. We will lead children to see and attempt to picture the beautiful in the rolling plains, snow-capped peaks, a field of ripening wheat, a weed-lined ditch bank, a well designed public building, and a multitude of other things in their environment. Gradually children will come to see that art is everywhere: that it is a part of all of us.

Creative art experiences are closely related to the development of a well rounded personality. They serve as an emotional release and thus make a definite contribution to good "mental hygiene." The individual who has learned to use a variety of art media in expressing himself creatively is seldom at a loss to know what to do with his leisure time.

The first task of the teacher is to develop within children a desire to express themselves through art media. Techniques in art should be taught when the child has developed sufficient background and begins to see a need for them. The child who is not satisfied with his product, who wants to know *how* to make it look right, is in a receptive frame of mind for help in technique. Skill in the use of technique comes best through practice in actual art experiences which are interesting and meaningful to the child. The desire to create must come first; techniques then become means to an end.

This course of study is built on the philosophy developed in the preceding paragraphs. It is suggestive rather than definite; therefore, there are no lists of outcomes by grades in terms of techniques to be mastered or skills to be developed. Rather, the continued growth and development of each individual child to the fullest extent of his possibilities are stressed. At each

grade level, there is a discussion of the art experiences for which many of the children may be ready. These experiences are discussed under such headings as Picture Building, Drawing, Painting, Color, Crafts, Modeling and Appreciation. Following these discussions are "Suggested Things to Do" with some directions as to how they may be carried out. It is not intended that all children or all groups will do all of the things suggested, or that they will do *only* these things. Teachers and children with originality will find many adaptations of these suggestions and many other types of activities in which to engage.

A definite attempt has been made to suggest art activities which can be carried out by teachers in average teaching situations. Many of them require little, if any, cash outlay for materials. The Bibliography For Teachers, at the end of this section, contains books which will be found helpful in utilizing waste and inexpensive materials for art work.

HOW ART MIGHT FUNCTION IN OTHER ACTIVITIES

Much of the work in art can grow out of the other activities of the school. The desire to express one's self in art may come from the need for stage scenery for a play originating in a social studies class, safety posters resulting from a "safety unit" in health, an interesting story which one wishes to illustrate for an "experience sharing" period in recreatory reading, and a multitude of similar activities. Not only do the various types of school activities motivate art expression, but in turn art expression enriches these activities.

This course in art has been correlated with the social studies course to the extent that directions for making many of the things suggested in the social studies activities are found in the same grade under "Suggested Things to Do" in the art course.

All art work need not be related to other school activities, since to do so might limit the field unnecessarily. The idea that "art is in everything" leaves the door wide open for experiences related to all phases of living. There is definitely a place for an occasional "free art period" when children may follow completely their own interests regardless of whether such interests tie in with any other activities.

A SUGGESTED ART PROGRAM BY GRADES

GRADES ONE AND TWO

Suggested Procedures and Outcomes

Picture Building¹

Little children have a natural love for telling stories by means of pictures. This natural interest should be encouraged and developed. The major emphasis should be on spontaneous expression and enjoyment, rather than on technique and skill in achieving a finished product. Children at this stage of development have little feeling for plan or composition in their productions. Neither are they much concerned with realistic presentation. Vivid imagination makes up for lack of reality in the stories they portray.

There are, however, some techniques which the children may begin to develop which will result in better work in picture building activities. Among them are:

1. Drawing large which helps in establishing the habit of filling spaces well
2. Making objects dark against light and vice versa. This will help to develop a feeling for contrast
3. Using bright colors in contrast to dull colors (Example: A brilliant red against black or brown.)
4. Using a scatter of color across a picture gives balance and brings out color pattern

The teacher should constantly remember that the child should think and express himself in natural, childlike ways and should *never* have adult standards of accomplishment imposed upon him.

Drawing

The child should have enthusiasm toward the expression of his ideas graphically. His ability in drawing should not be expected to be realistic or to have a finished quality. It is here that the child has a chance to tell his story in picture form, therefore, if he feels that his result lacks clarity he will need helpful suggestions. If he feels satisfaction, then he really needs no help. The child's drawings should show spontaneity, many individual differences, and an unconventional handling of sub-

¹The term "picture building" refers to the arrangement, plan, design, or composition of the child's production.

ject matter. The teacher should be very careful about judging these drawings from an adult point of view. Devices for accuracy in drawing should be avoided as it is best for the child to develop and improve his own approach to the problem.

Painting

In painting, the child should experience a feeling of extreme freedom. His interest in mass and color should develop naturally. He may learn that some pictures tell stories and that others do not. One does not have to illustrate in order to paint. The child should sometimes tell stories in his paintings. At other times he may paint for the pure pleasure of brush and paint manipulation.

Color

The child should be allowed freedom of color choices and not be expected to approach color technically. In using color, the number of colors should in no way be limited. As many lovely and unusual colors as possible should be available. When painting or coloring, children should be encouraged to repeat their colors across their pictures and to restrict the number of colors in each picture to some extent. In painting they will discover things about color which will undoubtedly excite them as the colors will often run and create mixtures. A teacher's color prejudices should be carefully guarded in order that the children will have the opportunity to love and enjoy *all* colors. Again, the teacher should encourage the use of dark and light varieties in color as well as intensities (bright and dull).

One teacher carried out a project of having a "green" day or a "red" day in which each child brought a bit of something green or red, or whatever color was being featured. (Such things as leaves, glass, dress materials, etc.) The children were amazed to find so many varieties in one color.

Red, yellow, blue, green, orange, black, white, brown, and purple should be recognized.

Crafts

Most children love to work with tools and materials. If the projects on which they are to work are selected on the basis of what can be accomplished rather successfully, interest in this type of activity will continue to grow. In the beginning, only

simple tools such as the hammer, saw, and scissors should be used. The joy of the activity itself and growth in the ability to use and care for tools are more important than the quality of the finished product.

Modeling

Clay is another art medium which offers countless opportunities for creative expression and one with which children enjoy working. The child should learn to handle clay in simple mass forms. Subject matter is secondary to simple sturdy form. If a clay object is not sturdy and breaks at completion the child soon loses interest. If it is impossible to have clay fired and glazed, it should be painted with tempera or powder paint and then shellaced (three or four coats). This latter finish is *not* waterproof and should not be used on bowls or vases.

Appreciation

An awakening in the child of a feeling for the beauty in the things about him is the major objective in appreciation. The child should begin early to develop an enjoyment of major art forms. He should have experiences in looking at the work of artists and should, also, appreciate the beauty of the fall trees, the far-away mountains, the nearby foothills, mother's pansy garden, a geranium plant, and other good examples at hand. In other words, the child should feel that art is everywhere; that he can use it, see it, and enjoy it in his daily living.

Suggested Things to Do in the First Grade

Pictures

May be drawn, colored in crayon or painted, about home activities, work and play.

Finger Painting

Formula 1

1½ cups laundry starch

1 quart boiling water

1 cup soap flakes

½ cup talc (May be omitted, but it gives body to the mixture)

Poster or powder paint

Mix starch with just enough cold water to make into a creamy paste. Add boiling water and cook until clear, stirring continually. Add talc and let mixture cool a bit. Add soap and stir. Pour into 8 half-pint jars with tops. Should be thick. Add poster paint for desired color. Two drops of oil of cloves in each jar will prevent an unpleasant odor.

Formula 2

Add water to powder paint (rather thick). Thin school paste slightly and add paint. Put drop or two of oil of cloves in each jar.

Formula 3

Mix paperhanger's paste into consistency of gravy. Add poster paint for desired color.

These mixtures, if placed in a cool place (above freezing) will keep for several days.

Procedure

Use paper having a glazed surface.

Dip paper in water and allow to drip over pan. Lay on table and smooth to eliminate bubbles. Put a spoonful of finger paint on paper and smooth with palm of hand. Now make a design with the fingers or the side of the hand. Lift finished painting onto a piece of newspaper. Press when dry if the painting is wrinkled.

The finished product may be a painting; a designed paper to be applied to craft projects, such as decorative paper for book binding, covering waste baskets, boxes, etc.; or wrapping paper for gifts. When applied to objects it is best to cover with clear shellac.

Paper Cutting

Skill in paper cutting and clarity of ideas can be improved in the first grade by having the children close their eyes and "see" their pet dog or other familiar animal or object. Have them attempt to take this "image" and place it (in imagination) on a paper and "cut around it." This is a good way of helping them develop clear visual images and will give them experience in handling scissors. The ability to recall an image is invaluable

in all art work. The children's drawing will also be aided by this experience.

Clay

Modeling of members of the family, pets, etc.

The organization of supplies and tools is highly important in clay modeling due to the "messy" nature of the material.

Containers

Five gallon stone jar with a top, a large lard can with top, or a wooden box lined with plaster, with top. To line a box with plaster, small nails are driven through the sides of the box so that they protrude. Wet plaster is smeared on about two inches thick. Individual containers can be coffee cans with tight fitting tops. Have adhesive labels on the outside of the cans with the children's names. These cans can be stacked on the floor or on a shelf.

Work areas

The table should be protected with newspapers. It is best to work with the clay on some non-absorbent material such as oil cloth, glass, tin, etc. A cardboard with an oil cloth cover is splendid.

Tools

Hairpins, sucker sticks, skewers, and other improvised tools can be used.

How to work in clay

The clay should be kept in a mass—legs, arms, ears, and other appendages should be pulled out of the large mass and never be added on as the clay in drying contracts and these parts will fall off. The finished product should be simple. Wash over the finished wet clay product for smoothing with an old paint brush. Allow to dry slowly. Laying a damp cloth over the object will help slow the drying of the outer surface. If it is very thick, some clay should be removed from the center of the clay object with a paring knife or a small spoon. When dry it can be sandpapered before painting or glazing. (Keep a damp cloth over clay until articles are finished.)

Hand Puppets



Hand puppets with simple butterfly bodies cut from cloth and potato, turnip, or other vegetable heads can be made and used in short dramatizations about the home or school. In a small potato or turnip make a hole big enough

for the index finger. The cloth body is slipped over the child's hand and the head held in place by the index finger being placed in the hole. The head can be painted with tempera or powder paint. It will be good for several days. New heads can be made and used with the same bodies.

Gifts

Gifts for mother and father can be made simply.

1. A good cardboard box can be made into a sewing box very easily.
2. Two mayonnaise jars can be painted and holes punched in the lids with different sized nails. This will make a pair of large size salt and pepper shakers for the stove.
3. A paper weight of clay for daddy's desk can be any solid and even-sitting object, such as a rabbit, elephant, or other compact animal form.
4. A razor blade container can be made by making a slot in the top of a baking powder can and painting it.

Suggested Things to Do in the Second Grade

Friezes

Murals or individual paintings of community helpers can be done in crayon or paint. Colored chalk should not be overlooked as a material.

If the chalk drawings rub very much, they can be "fixed." Fixatif may be made by mixing $\frac{2}{3}$ denatured alcohol to $\frac{1}{3}$ clear shellac. Shake well. Allow to stand over night. Retain the clear part and discard the sediment. Blow the fixatif on drawings with a spray gun (the kind used for killing insects).

Sponge Painting

Sponge painting is fun and a fairly new art activity. To do this: Mix powder paint with paste, about three parts paint to

one part paste. Add water until about the consistency of cream. Stir until smooth. Mix each color in a separate dish or cup. Use any kind of paper. Use sponge to apply the paint, using a separate sponge for each color.

Papier-Mache

Papier-mache fruit can be made in connection with the study of health or foods. Roll up newspaper. Use paperhanger's paste made in a very thin consistency. Dampen the ball of newspaper with paste and press firmly with two hands. Lay strips of newspaper over ball, adding more paste. Add several layers of strips each time, covering with paste. When round like an orange or shaped like a pear, apple, etc., allow to dry. When dry paint with powder paint.



Stick Puppets

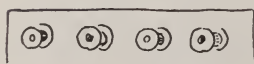
Stick puppets can be made easily in this grade. Have the children make drawings of community helpers on cardboard; color, and cut them out. Fasten each figure on a stick. The children can sit or kneel behind a table which becomes the stage.

Gifts



1. Tailored lapel pin. Very small clay fruits and vegetables can be made over a wire with a bent end, the size of an unbent hairpin. Make at least five or six fruits or vegetables for one pin. Leaves can be made of oil cloth. Allow to dry. Paint with powder paint. Shellac three or four times. Wrap the wire stems with green yarn.

2. Book marks may be made by cutting a corner diagonally off of envelopes and putting a design in the triangle.



3. Spools may be glued to a long narrow board and painted to make a tie holder.

Musical Instruments

Many musical instruments of the percussion type are simple enough to be made in the second grade.

1. Shakers out of all sorts of boxes and cans can be made by adding rice, rocks, beans, corn, or other small objects. It is well to have a handle as the tone is improved.
2. Get two can tops cut out of the top of a can; bend them irregularly; nail them loosely on a stick to make jingle clogs.



3. Buy some Christmas bells and sew to a cloth or leather strip.
4. Wrap sand paper around two small wooden blocks and tack it on. These may be rubbed together.
5. Drums may be made by stretching heavy, wet paper or inner tubes over round cardboard or wooden boxes or kegs. The paper heads have the best tone.

Games

Obtain a good sturdy corrugated cardboard box with the lid in good condition. Seal the lid back as originally. Cut a hole on one side. The box can be decorated. Make bean bags to throw in the hole.

GRADE THREE

Suggested Procedures and Outcomes

Picture Building

By this time the child has had some experience in art and knows how to handle several materials. His skill in manipulation will be greatly improved. He will show some feeling for dark and light, but he will have to be reminded of its importance from time to time. His drawings will show more clarity, and he can begin to see that colors when repeated across his picture *do* make a pattern. The use of pictures by good artists to show the children some of these principles is suggested. (Gauguin's "Red Dog," Van Gogh's "Cornfields" or "Boats," Marc's "Blue Horses.")

Drawing

Children will not yet be "naturally" worried about their obvious inaccuracies in drawing, therefore, it is best not to place an adult standard on their work. Some of the mentally brightest children will begin to worry about their lack of proportion. A

few suggestions in these isolated cases will help the individual children and will not discourage the group.

Children in this grade cannot be expected to draw objects well that do not interest them. An evidence of this may be found in the fact that most of them cannot draw a bowl of flowers in anything like a realistic way, while many of the boys draw excellent airplanes.

Devices for improving drawing should not be used. For example the stick figure is no more realistic or in good proportion than the figure the child naturally draws; so why teach him that *all* figures can be resolved to such a simple device. However, if a stick figure can be used to an advantage in some cases, there is no reason to exclude it forever.

Painting

During painting experiences, the children's understanding of the wide range of individual differences will be broadened. They may be shown that some artists paint pictures of home life: Millet's "Sewing Lesson;" others the sea, Waugh's "Seascapes;" Picasso makes an abstraction, "Three Musicians;" Cezanne does a "Landscape." These illustrations should help encourage children to show some of their own interests in their paintings. They should be shown some abstract paintings, as well as the more easily understood realistic paintings, so that they may become familiar with the two types. They should be encouraged sometimes to paint a picture that has no literary value and at other times to "tell stories" with their pictures.

Powder paint should continue to be used as the basic paint material.

New color names should be learned. Continue the use of many familiar colors. Experiment with the mixing of a simple and important color such as green (blue and yellow). Unusual colors like turquoise blue, red-violet, yellow-green and so on should be used, combined when possible with some of the subtle colors (tan, grey, reddish brown, etc.) as well as the more common ones (blue, red, orange, etc.).

Crafts

The average third grade child is much more skillful in the use of tools than the first or second grade youngster. Nevertheless, the major emphasis should continue to be placed on the

processes learned and skills acquired rather than on the finished product.

Improvement should be shown in all phases of craft work; cutting and pasting should be more accurate and neat, better sanding and painting should be expected, clay modeling should show sturdy construction and better conceived form. The use of glue, screws, and different ways of placing nails may be introduced in the making of joints, etc.

Appreciation

Display many pictures relating to children's interests and to their social studies and science activities. Encourage the children to discuss them informally. Enjoyment should be the major outcome of these experiences. Some modern American artists such as Grant Wood, John Stuart Curry, and Thomas Hart Benton should be included at third grade level. Continue appreciation work of this type throughout the grades.

Suggested Things to Do in the Third Grade

Pop-up Book



A pop-up book is fun. Designs or drawings in crayon or colored paper may be used. Plan the foreground of smaller things with a background of the larger. Draw the foreground figures and cut them out. Paste on a strip of paper. Fold

the lower half of this strip under. Make the background design larger and simpler. Mount it on a strip the same as for the foreground design. Paste the "folded under" part of the strip to the pages in the book. In pasting down the strip, be sure to experiment for the angle of pasting. The designs should lie down when the book is closed and stand when it is opened.

Spatter Painting

Spatter painting can be successfully done in the third grade. Make a full size drawing. Let the children plan what areas they want colored and what parts they want the color of the paper. Cut out of the picture the parts to be painted. The part of the picture left uncut is the stencil and is fastened down to another sheet of paper. Use an old toothbrush dipped in thin powder paint over screen wire, or against a small stick, to flick

the paint on to the uncovered parts. Some children have had success with putting on the paint with (insect) spray guns.

Clay Bowls

Simple small bowls and other round things can be made of clay. Make a ball from clay. Using thumbs and fingers, press out the center, molding it into a symmetrical shape. Leave sturdy walls.

Fist Puppets



A simple fist puppet can be made from a light-weight cardboard cylinder which fits the child's index finger. For the head use a cut-off sock toe placed over one end of the cylinder and filled in all around with cotton. Tie the open end around the cylinder. Sew on button eyes or draw features with crayon. Make a cloth butterfly body.

Musical Instruments

1. A sound box. Seal a cigar box. Cut a slit in each end. Put on a cloth or leather handle to hang it from. Tap it with a drumstick.
2. A brake rod hung by a wire and tapped with a small metal rod or ice pick can take the place of a triangle.
3. Make a small hole in a gourd and scrape out seeds with a bent wire. Clean and put in a few seeds, corn, or other objects for shaking. Plug up hole. Decorate.



4. To make a tambourine, stretch heavy, wet wrapping paper in a pair of embroidery hoops. Repeat the process with another pair. Make small discs of tin with holes in the center. Fasten the two pairs of hoops together with finishing nails, putting two tin discs on each nail.

Gifts

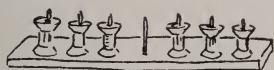


1. Strings of peppers. Model small clay peppers onto wire hair-pins. Make between ten and twenty. Allow to dry and enamel green or red. String closely together to hang in the kitchen.

2. Garden markers. The children can draw compact animals, insects, or birds (about 3" by 5"). Using these as patterns, cut out of 3" plywood and paint. Nail to sticks.
3. Many things can be made from ice cream cartons. A hole in the top of a half pint size, with decorated sides, will make an attractive string holder. A carton with a larger hole makes a good cotton picker for the bathroom. The quart size with a hole in the side makes a good knitting bag if a cloth or cord handle is added. The quart size can be inverted, discarding the top, and a knob or handle fastened to the bottom. This makes an attractive cover to place over a cleanser can in the kitchen.

In decorating these containers, it is hard to get paint or crayon to adhere to the waxy surface. It is best to cover the carton by pasting paper on it before painting.

Games



1. With a board about 2" by 12" and six spools, an excellent puzzle game can be made. Drive seven nails, equally spaced, in a straight line down the middle of the board. Color three of the spools one color and the other three another color. Decorate the board. Place three spools on the first three nails and the other three spools on the last three nails. This will leave an empty nail in the middle. Try to get the two groups of spools at opposite ends by moving only one at a time or jumping one at a time, never going backward.
2. For another game use an apple box end. Mark it into nine equal divisions. Put a screw hook in the middle of each division. Letter number values under each hook. Use fruit jar rubbers to throw at the board.

GRADE FOUR

Suggested Procedures and Outcomes

Picture Building

The importance of dark and light in a picture should be stressed continually in order that the children continue to use it.

Color repetition across the picture in terms of pattern should be re-emphasized. A fourth grader can see how lines, such as a path leading into a picture, direct the eye toward the important areas and contribute to them. Again, good examples of painting will help, as well as good examples of the children's own work.

Drawing

Many fourth grade children may begin to be dissatisfied with their ability to draw realistically. Help can be given in various ways when they show a readiness for it. Too much technical teaching will discourage rather than help, and while some devices can be used, it is best not to put the emphasis there.

Some of the children will begin to sense distance and depth in their drawings by showing a type of perspective. When this is done, the other children in the group may be interested in the effect thus obtained. If this happens it is sometimes good to call attention to such miracles of perspective as the straight highway or railroad track that appears to come together at the horizon line; how telephone poles that are close to us are large and those far away are smaller; and how buildings appear to diminish way down the street.

These are just simple ways of calling attention to proportion in distance and if the group has no children in it who are sensitive to this phenomena, then it is not at all important to distract the children from their interest in illustration by attempting to teach techniques for which they are not ready.

Another way of helping with proportion in drawing without placing major emphasis on it is to have the youngsters take turns being models for the group. Since it is impossible for most fourth graders to draw accurate human proportions too much should not be expected. We can, however, give them experience in figure drawing so that they can eventually achieve in this direction. Such work should be included for a day or two between other art projects.

The approach should be something like this: "To learn to draw figures we must see what the body does when it takes various action positions. Let's have John bat a ball. It doesn't matter so much whether our drawing looks like John, but it is important for our figure to look as if it can bat a ball."

If some youngster notices that there is something wrong with the arms in his drawing, it may be one of two things. "Do

arms bend just any place? Are they like a rubber hose or do they bend as if two boards were hinged together?" Have John bend his arm. The other difficulty may be that the arm is too short or too long. Have John drop his arm at full length and show the children where the finger tips come in relation to his knee and hip.

The average adult figure is seven to eight heads high. This proportion varies, especially in children's figures. Their heads are larger in proportion to their height. Have the children hold a pencil at arm length when looking at their model and see how "full" the head is. Then drop the measurement down the length of the body to see how many heads high it is.

If this type of figure drawing is started early in the elementary school and is continued on through, there will be a decided improvement, not only in actual drawing but in attitudes toward it.

The intermediate grades may be called the "self-conscious" period in children's development in drawing, therefore, it is best to place less emphasis on results for the time being.

Painting

There should be definite improvement shown in the fourth grader's ability to handle paint and an added interest in many materials. In the intermediate grades new techniques and materials should be gradually introduced. Paintings by well-known painters, particularly of the contemporary group, should be studied.

Color

Familiarity with the mixing of simple colors should be achieved by this grade. Now more subtle colors can be mixed, such as brown, and various grayed colors. Any fourth grader can remember that red and yellow and a little bit of blue can make brown. An attempt should be made to give the children free color experiences. These experiences should be of such a nature that it is hard to associate them with literal material. As an example, lead them to paint like music sounds, or like something smells or like pain feels. The results of these experiments may not be finished, but the experience of trying to do something which is abstract broadens the child's ideas and may lead to unexpected results.

Crafts

In the intermediate grades crafts should take a prominent place. Children of this age have usually acquired considerable skill in the use of tools, thus their products take on a more finished form. Then, too, crafts help to keep up an interest in art, which may begin to lag at this stage of the child's development.

Suggested Things to Do in the Fourth Grade

Friezes, Stage Scenery, etc.

Drawing and painting can be combined in making friezes, large wall hangings, show devices, stage scenery, posters, book illustrations, etc.

Crayon Etching

There are several ways of using crayon in combinations with other materials. One way of accomplishing a definite result with crayon is to put a solid layer of a light colored wax crayon, such as yellow or orange, over the entire surface of the picture. On top of this, stroking in the opposite direction, work on a layer of dark wax crayon such as blue, black, or brown. With the wrong end of a pen point stuck into a pen holder, scratch a drawing on the dark surface. This will give a light line drawing. Even fair sized areas can be scratched off. This technique is often called "crayon etching." The results are often very fine and children are quite delighted with a new way of using an accepted material.

Another technique for "crayon etching" is to work a solid layer of crayon all over the surface of the paper, and over the crayon layer brush a solid coat of India ink. A design is then scratched through the ink. India ink in some schools is prohibitive because of the expense. Black powder paint, mixed to a fairly thick consistency with some glue added, can be substituted. (To $\frac{1}{8}$ pint of paint, add three drops of glue.)

Crayon and Water Color Combined

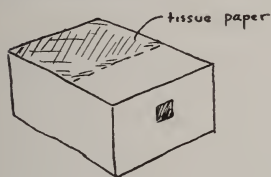
Drawings can be made in crayon in as many colors as desired, leaving the background uncolored. When the drawing is finished, water color, or thin powder paint can be washed over

the entire drawing. The wax crayon will resist the water soluble paint. Another way of using this same idea is to draw part of the picture in one color of crayon, for instance black, and wash on variegated color. For example, the sky or upper part of the picture might start with blue, work into an orange sunset and finally into a green and brown foreground.

Maps

Maps can be art projects. A map of Colorado showing farm products, mining areas, or National Parks and recreation centers could become a problem in design and color. Relief maps will help clarify problems of earth contour and are especially good when studying the differences in flat and mountainous country or in showing the volcanic structure of such a place as Hawaii. Relief maps can be made of *papier-mache* (newspaper, toilet tissue, and paperhanger's paste mixed together); a mixture of salt, flour and water; or powdered asbestos mixed with enough water to make a modeling consistency.

Peep Show



The peep show is one of the "show devices" that can be used to advantage in the fourth grade. In the peep show, a far back scene must first be planned, then a middle-distant one, allowing room for the distant one to show behind it. The near-distant scene can

be made up of small objects, such as figures, trees, and other small details. These are arranged in a box which has had the back half of the top removed and tissue paper placed over the opening in order that light may illuminate the scene. A small hole is placed at the front of the box through which one "peeps." Some good scenes for a peep show might include winter sports, the far north, or scenes in Hawaii.

Costumes



Western costuming for dramatic and dance programs is simple. Cowboy hats can be made of paper sacks; kerchiefs can be made from sugar sacks or pieces of sheeting on which "brand" designs are made in crayon or paint.

Fist Puppets



Fist puppets of *papier-mache* can be made for a jungle show. The head is made from a core of light cardboard (should fit around the index finger the length of the two end joints), one end of which is wrapped with a strip of dry toilet tissue until it is about the size of head desired. Leave about one half inch of core sticking below the head. Fasten narrow brown sticky-paper strips over tissue to keep in place, fastening it, also, to the core so that the tissue will not slip off. Fasten narrow newspaper strips all over the head, using plenty of paste. When smooth allow to dry. Make nose, eye-brows, etc., by modeling tissue and paste together, fastening well with strips of tissue. Dry and paint. Sew to cloth body.

Gifts

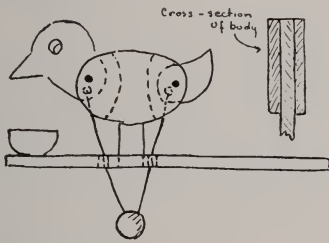
1. Clay tiles can be successfully made, and can be fired by placing them around the edge of the interior of the school furnace or stove, if there is no kiln available. Use a flat board the width of the desired tile. Have it several inches longer than it is wide. Nail strips on the long side one-half inch higher than the board. Oil the board. Press clay firmly on the board and roll with a damp rolling pin. Cut tile the desired length. Make an incised design with a sharp pencil. If the tiles are fixed in a kiln, have them "biscuit" fired, then the tile can be glazed in a solid color or underglazed in colors with a transparent glaze on top. Then they should be refired. If fired in an oven or furnace, paint with powder paint or tempera and put on two coats of waterspar varnish.
2. Tropical fruits can be made of *papier-mache*. Select real fruits which are interesting in shape. Grease fruit with shortening or grease. Put a layer of dry toilet tissue over the greased fruit. Moisten with paperhanger's paste and work on about four layers of newspaper strips, using plenty of paste. Finish with a layer of toilet tissue. Allow to dry thoroughly. Cut around fruit with a sharp knife. Remove fruit and fasten the two halves back with strips of newspaper. Put on a final layer of toilet tissue, endeavoring to make a smooth surface. If you want the fruit to rattle, put in beans or rice before fastening the two halves together. When dry, paint.

3. Making costume jewelry of various seed pods, beads, raffia, feathers, bone, seeds, etc., correlates well with the study of jungle life.
4. Beads can be made from heavy, slick paper such as the colored advertisement pages from old magazines. Cut in a long triangular shape. Roll on a heavy needle or hat pin, beginning with the wide end of the paper. Paste down the point. Shellac beads and string.



5. Waste baskets can be made from old cartons. Cut the four sides in the shape of a truncated pyramid. The small end is at the base. Make a square bottom to fit in. Punch holes around the sides and bottom. Lace together.

Toys



There are many elementary mechanical toys that are fun. The "Eating Bird" is one. It is a traditional toy and can be a bird, a chicken, or an animal. Cut two identical bodies from thin wood. Mount the two bodies on opposite sides of the flat side of a stick made from thin wood. Leave an

open space between the two bodies at each end for mounting the head and tail. Cut the head and tail from thin wood. Fasten strings to the inside, lower, part of the neck and tail. Mount the head and tail on the body, using a small nail for each. Fasten at right angles, the end of the stick on which the body is mounted, to a longer stick. Fasten one weight to the loose ends of the two strings. By holding the end of the stick on which the whole affair is mounted and moving it up and down or with a circular motion, the weight will make the bird eat.

GRADE FIVE

Suggested Procedures and Outcomes

Picture Building

In the fifth grade a strong center of interest in the picture should be emphasized. This can be obtained by strong contrast in dark and light, by brilliant color, by near-central placement, and by lines of radiation. An interest in new ways of putting on

paint and crayon will lead into a study of texture. Texture adds greatly to the interest of a pattern or composition. For example, stippled areas (dotted), striped areas, cross-hatching (cross-striped), or shaded areas give a pleasant contrast to solid color.

Drawing

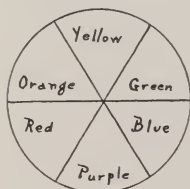
Drawing should be continued in the fifth grade very much as suggested in the fourth grade. There should be gradual improvement in the results achieved, but realistic results should not yet be expected.

Painting

Fifth grade children should begin to show an interest in technical problems and new materials, therefore, some emphasis will need to be placed on these two areas. There are many inexpensive materials for which different uses can be developed.

Looking at paintings and discussing how the artist achieved various results is one way of understanding and learning. Make an effort to obtain some prints of the work of such painters as Matisse, Picasso, Braque, Gauguin, Van Gogh, Rivera, and Marin and see how differently each of these painters used their paint. Notice the differences in textures.

Color



Colors which are complements can be understood by developing a simple six-color wheel. Show the children that those colors coming opposite each other on the wheel are unlike each other, and that when used together, they make a strong contrast in hue.

Another simple color harmony which they can understand is the "neighboring" or analogous group. Show them that colors coming next to each other on the color wheel are related and, therefore, make a more harmonious color combination.

A third color harmony that is simple enough for the fifth grader is the monochromatic scheme. This is composed of one color which is at its fullest hue for the dark, and is lightened by adding white. An example is dark blue, medium blue, light blue.

These technical problems in color should not be stressed to the exclusion of "fun with paint," but rather should be given as

experiments. With this procedure, it will not be long before the results begin to show in the work of the children.

Crafts

Skill in handling simple tools is fairly well developed by most fifth grade children. New tools that require greater manipulative skill should be introduced, such as the plane and chisel. Fifth grade children should be encouraged to finish their work well by using the wood rasp and sandpaper. They should be able to do a better job of painting and shellacing. A great deal of improvement, over former grades, should be expected in the finished product.

Suggested Things to Do in the Fifth Grade

Oil Painting

Oil painting has never been used to any extent in the lower grades, but it is possible to use it to quite a distinct advantage. The medium is so plastic that it gives the children an experience that no other paint really can give, due to the fact that it dries slowly and allows for constant change. Furthermore, if the painting requires correction on another day, it can be over-painted successfully.

The materials are prohibitive in price if regular artist paints are used. However, an inexpensive substitute can be obtained at hardware stores or lumber yards. These paints are called "tinting paints." They are the ones used by house painters and decorators. The paint comes sometimes in large zinc tubes and other times in small cans. Flat white paint may be bought in larger quantities by the can to use as a base for these paints.

Mixing is best done on a sheet of glass, tin cookie pan, or some other slick or non-absorbent surface. Brushes should be the long handled, short bristled type if possible. This type of brush, of very inferior quality, can be purchased at some dime stores and is good enough for elementary school work. If they are not obtainable, it is best to buy the smallest enamel brush that can be had. The bristles are a little too long, but they are stiff and can be used.

The paint can be applied to any of the following: old canvas, old window shades, the back of oil cloth, cardboard, or any papers, although brown wrapping paper is best. All of these mate-

rials are somewhat absorbent so the paint will have to have some amount of oiliness. If the paint is not oily enough, linseed oil may be added. If the paint needs to be thinner, turpentine should be used. Turpentine may also be used to clean brushes.

Maps

Transparent maps are interesting. They can be made on tracing or tissue paper. Use the thin paper as ordinary paper is used. Draw in pencil and then paint. The paint used should be water color and the map can be outlined with ink. A stiff cardboard frame should be made and the map pasted on it. Highway maps of the United States would be good when studying our country. To display these maps to best advantage, they should be hung in the windows of the room.

Picture Post Cards

Making of post cards descriptive of different places in the United States makes an interesting project. Pictures can be made by pasting on art paper different cotton materials used for color instead of paint.

Clay



Fifth graders can do successful coil building for clay pottery. This is an appropriate time as it can be correlated with the study of the "Indians of the West." The clay should be in a very pliable condition.

A base is made. The coil should be even before it is attached. Only ten to twelve-inch lengths should be attempted at a time. After each length is placed, the inside should be smoothed, holding the left hand on the outside to support the bowl and retain its shape. Large bowls should not be attempted. Three lengths should be a maximum size. When the last coil is on and the inside finished, the outside is then smoothed. If some places are too thin, some clay may be added if care is taken to see that it is well worked into the side of the bowl. The top can be trimmed even with a sharp knife. A damp cloth should be put over the bowl to delay its drying. When "leather hard" a border design may be incised into it with a sharp pointed pencil. When completely dry it can be sandpapered and fired. Any clay bowl should be fired as it will not be waterproof unless it is "biscuit" fired and then glazed and fired.

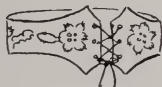
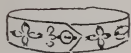
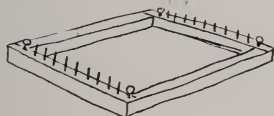
Papier-Mache Masks



Papier-mache masks can be made in connection with the study of Indian war dances. The Eskimos, also, use many masks. Make an oval shaped ball of clay the size of a head. Dampen a paper

towel and lay it over the ball. Rub paste all over the towel, pressing it snugly to the ball. Use rather long strips of paper at first and tuck the towel to make it fit under the chin. Make four layers of strips of paper, reinforcing well over nose, across forehead, and under chin. Ball up newspaper the size of a head and carefully lift mask off the clay and place it over the ball and allow to dry. The second day, dampen toilet tissue with paste and model eyebrows and lips, and enlarge the nose and chin. Finish with a layer of toilet tissue. When dry, paint, add hair, etc.

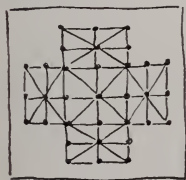
Gifts



1. When studying ways of weaving, a small rag rug can be woven. A simple picture frame loom can be made. Be sure and use a heavy wire on outer edge to keep the rug straight while weaving.

2. Belts, ties, and purses can also be woven of yarn.
3. The study of home industries during Colonial days may encourage the making of a doll or baby-size pieced quilt.

Games



There are many traditional toys and games that were used in Colonial times and on down to the present. *Fox and Geese* is a good example. Geese may be pegs or marbles and the fox, a peg or marble of a different color. If pegs are used, holes are bored in the playing board; if marbles are used, cup-like depressions are made in the board. Or, the board may be marked off with black spots and beans or corn used instead of pegs or marbles. At the beginning of the game, the fox is placed in the center of the board and seventeen geese are lined up at one end. The

fox can jump the geese, but the geese cannot jump the fox; they must corner him (get him where he cannot move or jump). Jumped geese are removed from the board. Moving and jumping may be done both forward and backward along the lines.

The geese win if they succeed in cornering the fox. The fox wins if he captures twelve geese (it takes six geese to corner the fox).

Models

Fifth graders are capable of making good models of things or places such as an oil well, American farm, industrial scene, Indian village, or the California missions.

GRADE SIX

Suggested Procedures and Outcomes

Picture Building, Drawing and Painting

There should be, during this grade, a definite improvement in drawing and a real feeling shown for composition. Aesthetic quality begins to make its appearance in the work of the more sensitive children.

Lettering

EFHILT
AKMNVWXYZ
BDGJPRU
COQS

If manuscript writing is taught in the lower grades, lettering will be much easier as the principal form is already well established. The simplicity of the manuscript letter can be retained with an emphasis on interesting spacing. For example, the cross-bar of the E, F, A, B, and other such letters can be slightly raised or lowered from the center. This spacing should be consistent.

The children should always work with guide lines as it is impossible to do good lettering without them. An effort should be made to keep all vertical lines vertical and horizontal lines horizontal. Spacing in lettering should be done by eye rather than measurement. Such letters as H, I, and L require more space between the letters than such letters as L and T, because of the parallel lines coming against each other. L and T have open spaces coming together which give the feeling of more space. It is best to encourage the children to use only simple

letters, for legibility is of vital importance. The use of *round-nibbed* pens is a good plan as it solves many problems for the children and also gives them experience with a new tool. India ink, because of its richness, will help achieve good results.

Color

A sixth grader who has had good experiences in color during the preceding grades should have a feeling that color can be either very carefully thought out or accidental in its effects. He is capable of understanding that some colors seem to come close and others recede. He can be shown this phenomenon by looking out at the mountain in the distance and seeing in the foreground various colors which appear near. It is a good plan to gather good examples of painting which illustrate this point. Any of Cezanne's paintings are good examples because he worked on this problem his entire lifetime. He called this problem "functional color." Thus we can reconstruct our color wheel, beginning with blue for the far distance, working into the purples and the greens, the yellows, and the reds.

Another interesting thing about color that sixth graders enjoy is the psychological effect in regard to warm and cool colors. The cool colors are blue and green, and the warm colors are yellow, orange, and red. Purple is a vascillating color which cools with more blue and warms with more red. It is interesting when discussing cool and warm colors to point out that they may be used in relation to home decoration in order to make the home more comfortable and attractive. Such examples can be shown, as the northeast room, which tends to be extremely cool in winter. Warmly-toned walls and bright warm accessories in this room will give it warmth. A southeast room might be worked out in tones of the cooler colors in order to keep it from seeming hot.

Crafts

Crafts continue to hold an important place in the art activities.

Suggested Things to Do in the Sixth Grade

Latin America opens a broad vista in the study of all of the arts with a special emphasis on the crafts. The paintings and illustration done in connection with this study can be more colorful than usual and extremely gay.

Tempera Print

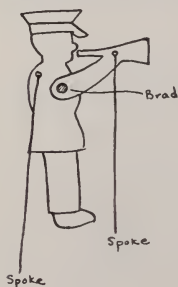
The tempera print is a new technique which will interest the sixth grade pupil. To make a tempera print, first plan a design in black and white. Paint the white areas with white tempera. After the white paint is thoroughly dry, brush over the entire picture, background and white areas included, with India ink. Allow this India ink coat to dry. Then hold under a stream of water, washing off the ink from the white areas (it will come off easily). When dry this design will look as if it were a wood cut.

The same thing can be done with colored tempera or colored powder paint. The design is painted in tempera in color, leaving the background paper clear. After the paint is thoroughly dry brush a solid coat of India ink over it. Allow to dry thoroughly before washing it under water. The effect will be a rather faded color against a rich and brilliant black.

Carving

Carving may take the place of modeling. Masks or totem poles may be carved from balsa wood, plaster, or soap. To carve in plaster, the plaster must be properly prepared. Get a box the size of the slab needed. Grease it. Use ordinary plaster of paris. Start with a pan half full of water. Sift the plaster a little at a time into the water. *Do not stir.* Allow the plaster to settle before adding more. When the plaster seems to cling to the top of the water in small islands, stir it a little to get rid of any lumps. Pour carefully into the box. Shake the box a little to make air bubbles rise to the surface. Allow to set about forty-five minutes or an hour before carving. Carve with a pocket knife or paring knife. If the carving cannot be finished, keep in a pan of water. It will carve best while wet.

Movable Stick Puppets



A puppet play of movable stick puppets offers many possibilities. The puppets are made of cardboard, jointed with paper brads and worked by bicycle spokes. The idea of this type of puppet comes from the Javanese. They may be used on a typical hand puppet or string marionette stage, or they may be used as shadow puppets and worked behind a tightly stretched screen with a floodlight cast on them from the rear.



Art crafts in a one room school

Gifts

1. Baskets and Mats: To make a pine needle mat, proceed as follows: Soak the pine needles and raffia for several hours. Take a bunch of about ten needles, bend in a circle, and using a sturdy needle bind with raffia. Work around this center core, sewing small bunches of needles to it. Add a new bunch of needles before completely sewing on the last bunch.



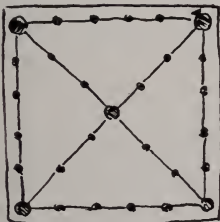
2. Tin cans may be opened up and many things made from the tin, such as ash trays, picture frames, flower holders, etc. A good pair of tin



snips is essential to good metal work. Try to avoid soldering but if necessary an electric soldering iron can be bought very cheaply. The solder that comes on a spool with an acid core is best. Scrape the surface to be soldered until bright. Get the metal very hot. To make an ash tray from a coffee can, beat the bottom in with a ball hammer before cutting off the sides.

3. Glass etching. Secure tumblers, ash trays, mirrors, or bowls with no decoration. Plan design. Lay the drawing under the glass. Trace the design onto the glass with a china marker pencil. Cover the part of the glass to be kept *unetched* with a cheap fingernail polish. Try to keep the edges of the design smooth. When the fingernail polish is dry apply the acid. (An acid etching paste can be obtained from an art dealer. It is not very expensive and is harmless.) Wash off the acid. The fingernail polish will peel off if rubbed vigorously.

Games



A game originating somewhere among the primitive Indians of the Americas can be called "Four Sticks." A board with proper markings, four sticks for throwing, and one man for each player are needed. The throwing sticks are flat on one side and rounded on the other. The flat side is white; the curved is black. To win, the player must get his man around the board first.

Taking turns, each player starts at the same corner. Throw the four sticks on the table; move the number of white ones coming up. If four white sides turn up, it makes a four place move, and an extra throw. Should four black sides turn up, four moves, and an extra throw. An extra throw is given when an opponent's man is sent back. A man is sent back when an opponent lands on the same lot. If a man lands exactly on the corner, he can cut home on the diagonal line. To get in home, a throw must take a man exactly one mark past the goal. If the throw does not place him on this spot, he must wait his turn and try again.

GRADE SEVEN

Suggested Procedures and Outcomes

Picture Building, Drawing and Painting

In painting, drawing, and other such activities, there should be evidence that thought has been given to the subject matter as well as to its art quality. Many youngsters in this grade show a real desire to achieve "loveliness" and at the same time many show intellectual ability in the selection of the literary subject matter for their compositions. Use colored chalks and try rubbing some areas and leaving others rough. Use powder paint or tempera for flat areas. When dry use chalk over some areas for shading or texture emphasis.

Lettering

Art can contribute to school life through posters and other lettered materials. Good taste in the selection of simple and suitable letter forms is important. Simplification of idea adds to the beauty of posters. Good designing is vital to fine layout.

Color

In the handling of color problems the seventh grader should begin to make real choices and to do experimental work. He should be encouraged to keep an unbiased and brave approach to the uses of color.

Crafts

Children's interest in crafts continues but there is an evident division in the group. Some children show a swing in interest back to drawing and painting activities, while others show an increase in interest for the crafts, and a third group begins to show evidence of consumer interests.

Appreciation

Appreciation is taught at *all* times during *all* art projects, but since there is a consumer group developing at this time, it is a good idea to offer activities for them. A study of art in daily living is important. Attention should be called to art as expressed in industry and advertising. Such questions as: What part does use play in the design of this toaster? How does the use of plastic affect the design of this lamp? How has modern painting affected architecture? Can architectural forms of the past be adapted to Twentieth Century building needs? And so on.

Perhaps one of the most vital contributions art can make to "American Life" is in the building of attitudes of respect for and pride in the fine things in life. There should, also, be an awakening of the part that each American can play in desiring beauty and working to achieve it. A growing love and pride in one's surroundings should carry over into an interest in the attractiveness of the schoolroom and an interest in the home environment.

Suggested Things to Do in the Seventh Grade

Stained Glass Windows

When studying Gothic cathedrals, stained glass windows can be made. One method is to make a heavy paper window, cutting out the glass areas and filling them with colored tissue or cellophane. Mount the paper window on a wooden frame. A more satisfactory way is to buy inexpensive cloth-based cello-glass and paint the design on with rather thin, cheap oils. Cover the areas, representing the lead, with thicker paint on both sides.

Scrap Glass Mosaics

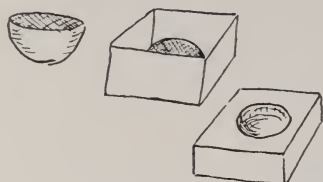


Broken dishes, glass, and scrap sheet glass can be saved. Scrap sheet glass can be purchased very cheaply. A flat design is planned and a color pattern

worked out in crayon or paint. A second plan, actual size, is made on brown paper. This should be tacked on a large drawing board. The pieces of glass can be broken or cut to needed sizes. The smaller they are the more mosaic-like the result. Paste is applied to the paper and the bits of glass are embedded in the wet paste. When the entire design is finished, a wooden fence is

made around the design. Wet plaster of paris is poured over the design. When the plaster is set, remove side boards, turn upside down. Peel off the original drawing. Some washing and scraping will be necessary. The mosaic may have a wooden back and frame, or it can be set in a table top or wall.

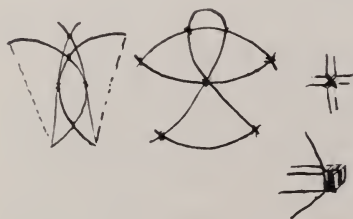
Molded Clay Bowls



Seventh graders are capable of making one-piece molds for clay bowls. Make a bowl in solid clay (it does not have to be hollowed out to make the mold). It must have a contour that has no undercuts in it.

Lay the clay bowl, top down, in a box that is three inches wider and two inches deeper than the bowl. Mix plaster of paris. Pour over the clay, filling the box. When it has set tear off box. Pull out clay bowl. Be careful not to injure the mold. The edges of the mold may need trimming. When the plaster is dry (about two days) slip is poured into the mold. (Slip is a thin clay, about the consistency of whipping cream.) Fill to the brim. Allow to stand, filling when it lowers, until the desired thickness of bowl has adhered to the side of the mold. Pour off excess slip. Let the bowl dry in the mold until it pulls away from the sides. Remove the bowl from mold and trim where necessary. Thoroughly dry and sandpaper before firing. Then glaze and fire. This is a good process when studying the pottery of Egypt and Greece, as much of it was made in molds.

Kites



One of the art projects which children enjoy in connection with the study of China is the making of kites. Excellent kites can be made and a great deal of fun had.

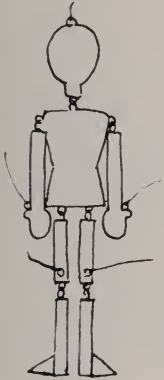
Frame: Light tough wood: spruce, yellow pine, basswood, and white cedar, bamboo and split bamboo, red-wood shingle, or basketry reeds.

Lashing: Should be done with string.

Covering: Good grade of tissue paper, Japanese or Chinese rice paper, or celophane. For box kites, use lining cambric, or silk.

String: For small kites—white cotton string, or seine twine is serviceable; for large kites—small rope or wire.

Marionettes

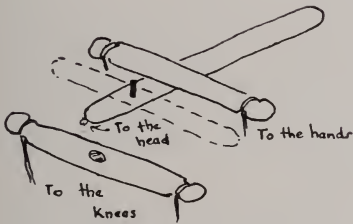


String marionettes with not more than five strings are good if too much time is not consumed in the making. A simple one is made of balsa wood or *papier-mache* for the head, a piece of soft pine for the body, and doweling for legs and arms. The control should be the two-piece variety.

Gifts

1. Inexpensive mirrors may have enamel painted designs, letting the mirror show through.

2. Linoleum-blocked runners. Linoleum blocks are made from battleship linoleum. Draw the picture or design on paper, cover



the back with white tempera paint, and trace on the linoleum. Decide which parts are to be the color of the paper on which the printing is done and which the color of the ink. Carve out those which are to be the color of the paper. Use printer's ink, black or colored, and apply to surface of block with a roller. Place paper on a pad of newspaper, and press block on paper by stepping on it evenly.

In making cloth runners, use oil paints to which has been added some of the following: Mix ten drops of vinegar, five drops of lemon juice, $\frac{1}{3}$ cup of turpentine. This mixture makes the paints permanent when printed on cloth.

3. Felt belts, purses and caps. Plan the design on paper with crayon. Use scraps of felt and make design by stitching with colored yarn.
4. Wood carving requires some tools but a good pocket knife can do wonders if a wood like Honduras Mahogany or red gum is selected. Figures in the round can be carved easily.

Dioramas

Many dioramas and other models of various kinds can be done effectively by seventh graders. A diorama is a scene made in a box. The natural habitat displays seen in natural museums are good examples of dioramas. Factual information becomes more meaningful when an effort is made to organize it into accurate models.

GRADE EIGHT

Suggested Procedures and Outcomes

Picture Building, Drawing, and Painting

Mural paintings in connection with social studies, language arts, community projects, or purely as an art problem are fun. They can be done on brown wrapping paper, unbleached muslin, an old wall, canvas, and many other materials. Whatever kind of medium is used should be adapted to filling large areas and flexible enough for detail where needed.

The study of portraits can be attempted in the eighth grade. Simple proportions found in the average face are easily understood. After attention has been given to the study of proportion, the children will have great fun doing "self-portraits" with the aid of mirrors. This can later work into caricatures of important people in world and national affairs or different school personalities.

Lettering

A study should be made of modern advertising. Types of lettering, layout (arrangement or design), and subject matter can be found in magazines, on billboards, on posters, etc. Eighth graders are capable of developing good alphabets and really working out layout problems. Care should be constantly taken against "fancy" or "eccentric" letter forms.

Color

In connection with mural painting, the study of restraint in color can be useful. (By restraint in color is meant colors which are not bright and are not dark.) The problem of keeping the painting "on the wall," and also in harmony with its surroundings is an important one.

A problem in direct contrast to the preceding one is the use of color in the poster. Here it is necessary to use strong contrasts in color.

Modeling

Modeling in clay in the "modern manner" is possible. A study is made of modern forms—the streamlined effect and the mass effect. Get pictures showing the work of Paul Manship, Lehmbruch, Brancus, Zorach, Epstein.

Suggested Things to Do in the Eighth Grade

Wall Decorations



There are many ways of designing for wall decoration. One of the most satisfactory is the flat type. No attempt is made to represent form or depth in the composition. Color should be somewhat restrained and limited. Outlining can be done but not in a rich black; rather the outlines should be in a lower value of the color of the area. It would be interesting to work out such a mural when studying the contrasts in Colonial and Modern Life, the Civil War, the gold rush, Colonial home life, inventions, or "Labor and Capital."

Modeling



Allow the youngsters to model things in streamlined or mass style. They should not copy any of the examples shown but rather interpret, in this style, something they know well.

Dioramas and Models

Art can contribute to the social studies units by helping in the construction of dioramas depicting life in America, or it can

contribute to nature study in dioramas of natural habitats. Models can be made of mines, irrigation projects, winter and summer sports, etc.

EVALUATING THE PUPIL'S WORK

Evaluation should always be in terms of the stage of growth and level of ability of the child, never in terms of the standards of adult artists. Emphasis should be placed on creative expression (the child's interpretation), and upon improvement in the use of techniques, in keeping with the child's stage of development, which help him to express himself more effectively. Remember that children often do not see things as we do. They look at life from a different angle: physically, mentally, and emotionally. If we attempt to mold their form of expression to our preconceived ideas, the result will be stilted, unnatural, meaningless work.

The teacher should lead the child to evaluate his own work. Encouragement, by pointing out the good things he has done, followed by questions about other phases, will often stimulate the child to make suggestions of his own for improvement, to which may be added some ideas on the part of the teacher.

If children are learning to see the beautiful in the things about them, if they want to express what they see and feel, in short, if art is an enjoyable experience for them, we can rest assured that understanding guidance is all that is needed for continued improvement.

SUGGESTED ADAPTATIONS OF THIS PROGRAM FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

In schools having more than one grade with one teacher much of the art work can be carried on in groups comprising several or all grades. This does not mean that all children do the same thing, although it may be convenient at times to have all of them using the same medium. For example, it might be advantageous to have all children engage in painting during a given period, in order to facilitate the preparation and use of materials; but different individuals and groups might be painting entirely different things. The teacher's part in such an activity is chiefly that of stimulating a desire to express one's self through the medium of paint, encouraging individual effort, making suggestions,

and instructing in techniques where necessary. A great deal of this work is individual, so it matters not at all if several age groups are working together; in fact, it may be an advantage in that older children may help the younger (under the teacher's guidance), which creates a happy, democratic, learning situation.

Art interest centers offer another possibility for an art period in which the entire school may engage and in which individual interests and abilities are recognized. Under this plan centers, such as wood working, clay modeling, painting, etc., are set up in various areas of the room and necessary materials are made available at each center. Under the guidance of the teacher each child decides at which center he will work. The child may be allowed to change from one center to another, but he should be encouraged to stay with one thing long enough to have made some worth-while accomplishment.

Opportunities for art work, in which several or all grades may engage, can be provided through various types of "all school" activities such as a Christmas play, health project on "foods," Young Citizens League school beautification campaign, etc. The children should be allowed to make the costumes and scenery for the Christmas play; at least, they should have a definite and important part in this work. How utterly ridiculous for mothers to make the costumes and the teacher to make the scenery and then wonder what to do for an *art lesson* on Friday! The one room school frequently provides an almost ideal setting in which boys and girls can work together for the common good of the group.

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THE PROGRAM IN MUSIC

WHY MUSIC SHOULD BE TAUGHT

Music should be taught because:

1. It serves to enrich, and gives added meaning to the experiences of daily living. The potential beauties of nature, for example, take on new meanings when we hear music or sing songs about trees, flowers, birds, the sunset, and other experiences of people in their contact with the natural world.

2. The ideal of free men in a democracy is to provide for "everyman" a bountiful and enriched life. In the past, the experience of the glories of music, has been restricted to the cultured few. The common man, with his increased abundance of leisure, and educational privileges, now has as never before, the opportunity of enjoying the good things of our cultural heritage. Whether democracy, as a way of life, will eventually win superiority over the aristocratic, hinges somewhat upon the way in which the "everyman" will perpetuate the finer things of life. The improvement of tastes is a major challenge to education in a democracy.

3. People come in contact with an abundance of music in their daily lives. The radio, screen, community concerts and recitals make music almost ever-present in our environment. It is still a major task of the school to teach people to "do better the desirable things they will have to do anyway". Since listening to music is demanded by the environment within which we live, it is our duty, as well as our privilege, to reap the greatest amount of enjoyment possible from these experiences.

4. It is the purpose of democratic education to assist each individual to develop his potentialities to the greatest possible degree. Every child is musical in one way or another. No longer can democratic minded teachers justify their efforts in terms of highly developed performing units alone. Instead, it is the sacred obligation of each teacher to teach each child in such a way that he will discover worth in a form of musical participation according to his individual aptitude.

5. Tone, rhythm, melody and harmony have a desirable and direct effect upon the human organism. The child who has come

under the spell of music will know a spiritual exaltation which will tend to raise his personal evaluation of the worth of life and living to a higher plane.

HOW MUSIC MIGHT FUNCTION IN OTHER ACTIVITIES

Music, as we have seen, does not function merely as an art of sound totally unrelated to man's other activities. Instead, it is used to intensify the experiences of life, and thus render these experiences more meaningful than they could be without music. The teacher should be constantly aware of the connection between music and life experiences and make the necessary provision in daily class work to help children identify music with their immediate experiences. Some suggestions for establishing this relationship with school activities are as follows:

1. Sing songs and hear music related to the units of work engaged in by the class. There is a wealth of musical material which might be used in connection with such topics as home, pets and animals, play activities, school, community helpers, other lands and people, Colorado, our American neighbors, nature study, etc.
2. Make original music related to activities of the group. This may take the form of short melodies for greeting cards, songs about the activities and people studied in the class, rhythmic pantomime to music illustrative of activities studied, etc.
3. Study how such things as occupations, clothes, food, climate, landscape, government, religion, etc., has influenced the music of the various culture groups studied by the class.
4. Relate the making of musical instruments to shop work. Learn about the qualities of wood and metal by using them to produce sound.
5. Relate singing to the use of the spoken language. Notice the ways in which melodies follow the natural rhythms and voice inflections of speech, become conscious of correct pronunciation, and clear enunciation through singing, and note how the coloring of the vocal tone can convey our feelings about things and ideas.

6. Correlate music with the work in art by having children draw or paint the impressions they have gained from listening to music, select pictures to illustrate music listened to or songs sung by the class, note the similarities between the rhythms of a picture and the rhythms of a piece of music, and find dominant and recurring ideas in music and in a picture.
7. Find a poem which expresses the mood of a piece of music heard. Note the similarity between the rhythm of the poem and the rhythm of the music.

The above suggestions are intended to be illustrative of the types of relationship between music and other activities which the teacher may establish in the classroom. The resourceful teacher will discover, almost daily, other ways in which music may be related to the children's activities.

THE PLACE OF MUSIC IN CHILD GROWTH AND DEVELOPMENT

The Relation of Music to the Basic Experiences of Living

The program of music in the public schools of the United States has been developed largely around the idea of music as a pure or "autonomous" art. This means that we have asked boys and girls to sing songs, to listen to music, to play instruments, and to a lesser extent to create original melodies, because music gives pleasure to the ear. Our chief concern has been to teach children to produce beautiful tones and to organize these tones into melodically and harmonically acceptable patterns. We have, it would seem, been concerned with the mechanics, or the vehicle of musical expression, to the extent that the *content* of musical thought and expression has been neglected. As teachers, we need to critically re-examine the relation of music to the living, vital experiences of daily life and attempt to restore this relationship in the minds of those we teach.

As life goes on, and human beings engage in the processes of living day by day, their exclusive concern often becomes the making of obvious and necessary adjustments to their environment. As these routines to life become habitual and matter-of-fact the organism is frequently impelled to overlook the subtle values which are inherent in all normal experiences. It is often an awareness of these subtle values which gives life its most

genuine richness and meaning. It is the role of the artistic mind to capture these values and make them concrete for posterity in some expressive form. This means, then, that the common events of daily life are incomplete if allowed to stand as we ordinarily know them. An expressive picture, a song, or a bit of poetry may possess that quality which tends to complete the many unfinished experiences of daily living. How many children have had the experience of going to grandfather's on Thanksgiving Day enriched by both the poem and song "Over the River and Through the Woods to Grandfather's House We Go"? How many workers in our fields have had meaning added to their labor by looking reflectively at such pictures as "The Man With the Hoe," "The Sower," or "The Gleaners"?

The role of music, as an art, is to transcribe the rich, and often subtle qualities of experience into beautiful and symbolic sounds.

This belief, then, in the possibility of restoring the connection between music and familiar experiences, defines the central task of the music teacher. Out of the vast array of musical materials for children the teacher must first be equipped with sufficient artistic insight to choose songs to sing and music to play and hear which is a sincere and vital expression of a thought or idea, or a feeling. Secondly, the teacher must be familiar with the interests and experiences of children. Only through an understanding of child life can he realistically assist children in the discovery of the connection between expressive music and experiences familiar to the child. Thirdly, the teacher must be a sympathetic, understanding, and enthusiastic worker with children, and must possess teaching imagination to the degree that he is capable of making the learning process a lively adventure for the child.

Music and Our Democratic Belief

Since, as American teachers, we are committed to a faith in the democratic way of life we must constantly evaluate our efforts in terms of the framework of democratic principles. In doing this, the teacher can either become entangled in a maze of philosophical thought or he can rest his case on some of the simple concepts embodied in our early American documents.

If we, as teachers, are committed to the belief that "We hold these truths to be self-evident, that all men are created equal, and they are endowed by their Creator with certain Unalienable Rights, that among these are Life, Liberty, and the Pursuit of Happiness", we have, at once, accepted a frame of reference within which to work, and which serves in giving direction to our teaching activities. Equality of opportunity means not only equality of economic opportunity, but also the privilege of everyone to share in the good things of our culture.

Many of the finer things in our cultural heritage have grown through being sponsored by a small leisure class or a "cultural aristocracy". In the past, it was not the right of all men to share and share alike but the right of the privileged few to reap abundantly, while the common man occupied himself with doing the drudgery of the world's work. With democratic, free education, it becomes the right of all men alike to participate in the good things of our cultural heritage. Music, we believe, is one of these.

Realizing, then, that much of our musical heritage grew up around a leisured class, we must recognize, first of all, that we can not expect to transmit, with sympathetic understanding, the whole of this heritage. Much of our music is expressive of the interests and ideals of a small group of people—a "cultural aristocracy". Since, in our system of free public education we deal with a broad cross-section of humanity, we must recognize that the interests and life of these people differ from the life of the small cultured group around which some of our musical heritage grew. This means that the body of our musical culture is neither all good nor all bad. It does mean, however, that some of it is expressive of the values which are central to the experiences of all people while another part appeals to a restricted audience. A part of the work of each music teacher is to constantly evaluate musical materials in terms of its possible meaning for the group with whom it is to be used.

In addition to the critical selection of materials from our heritage of music, the teacher should further realize that much of the great music for a wider American audience has not yet been written. When our educators come to realize that creative undertakings need their sponsorship and to this end invite the creative artist to write for the school population as J. S. Bach

wrote for his audience, there will dawn a new day in the creative life of America.

Music and the Theory of Use

One of the most widely accepted doctrines of curriculum construction has been the doctrine of "social utility". This theory holds that it is the job of the school to teach boys and girls to do well the things that life demands of them. The exponents of this theory have made careful analyses of what people do in daily living and have incorporated their findings into the body of the school curriculum. The words modern children learn to spell, the work with numbers, the social habits and attitudes they attempt to develop have been gleaned from a study of life situations outside the school.

When one considers music from the point of view of this theory it is evident that the school has a responsibility in meeting the needs created through the use of music in daily life. No other culture in the history of civilization has provided the abundance of music for all to enjoy in the degree that this is accomplished through the radio, movie, and community concerts. Music to hear is almost constantly a part of our physical environment. It remains for the school to teach people to gain genuine joy, satisfaction, and understanding from these listening experiences.

A SUGGESTED MUSIC PROGRAM BY GRADES

SUGGESTED OUTCOMES AND ACTIVITIES
FOR GRADE ONE

Singing

1. A repertory of forty to sixty songs related to children's interests.
2. The ability to use a light, pleasing singing tone.
3. The ability to match tones and to reproduce correctly a simple melody sung by the teacher.
4. The ability to cooperate, as a group, in singing in unison.
5. The ability to sing in good tempo.
6. The ability to sing in a manner acceptable to the poetry or thought expressed in the song.
7. The ability to express, through pantomime, both the rhythm and the dramatic thought of the song.
8. Independence in singing through singing alone and in small groups.
9. The difference between speaking and singing a thought or an idea.
10. The ability to create simple songs to familiar sentences.
11. The ability to discover the relationship between the music and the thought of the song. For example, such ideas as "hop, hop, hop" goes by "hops" in the melody, or "gently drifting down," moves slowly downward in the melody.
12. Imitate familiar sounds which utilize the idea of high and low, loud and soft, fast and slow, long and short, etc.
13. Develop a sensitivity for correct enunciation and pronunciation through singing.
14. Develop a concept of the musical phrase through the phrase-wise learning of a song.
15. Sing songs about home, lullabys, school, good-morning and good-bye songs, travel, our neighborhood, play, community helpers, animals and pets, songs about communication such as the radio and telephone, humorous songs, nature, simple patriotic songs, etc.

16. The ability to sing both with and without an accompaniment.
17. A feeling for tonality or "home tone" by singing many songs and creating simple melodies which end on the tonic.

Rhythm

1. The ability to use free and relaxed bodily movement to music.
2. The ability to engage in a rhythmic activity in unison.
3. The ability to adjust to regularity of beat or pulsation in the music.
4. The ability to recognize and respond to rhythmic movement suggested by the music such as skip, walk, run, gallop, hop, sway, slide, etc.
5. The ability to reflect, through movement, imaginative characters such as gnomes, dwarfs, fairies, elephants, flying birds, etc.
6. The ability to rhythmically reflect with bodily movement such moods as quiet, tired, hurry, gay, sad, etc.
7. The ability to respond to various tempos or speeds of music from relatively rapid to relatively slow rhythms.
8. The ability to respond to regularity of beat through clapping, marking on the board, walking, tapping, etc.
9. Develop a recognition and response to double and triple measures through clapping loud, soft, or loud, soft, soft; clapping first and second violins; marking on the board; bouncing balls; etc.
10. Utilize percussion instruments for developing a response to regularity of beat, accented and unaccented beats, and the musical phrase.
11. Develop the ability to move gradually faster and gradually slower to music that retards and accelerates.
12. Utilize materials for response to regularity of beat in which the beat continues through a sustained sound.
13. The ability to accompany the rhythm of songs sung by the class on rhythm sticks, triangles, wood blocks, and other appropriate percussion instruments. Express a recognition of regularity of beat, variations in tempo, accented and unaccented beats, and the rhythmic phrase.

14. Sing songs about movement and use these songs with appropriate rhythmic action. These songs will include elephants, swinging, bouncing balls, etc.
15. Move rhythmically to simple singing games and folk dances. Express the regularity of beat, accented and unaccented beats, and the phrase rhythm in these games and dances.

Music Reading (Preparatory Experiences)

1. A rich background of music through singing songs, rhythmic pantomime, listening to music played and sung, playing percussion and simple melodic instruments, creative expression through playing, singing, rhythm, and making simple melodies.
2. The ability to discriminate between musical and non-musical sounds such as the difference between speaking and singing, the noise of tin, and the "singing" tone of glass or skin.
3. The ability to distinguish "by ear" between the sounds of metal, skin, glass, wood, string, etc.
4. The ability to recognize by name, sight and sound, the most common instruments such as violin, cornet, piano, drum, flute, and clarinet.
5. Some elementary understanding that music is made through the refinement of the sounds of our natural world; that wood, metal, skin, and glass can be used in making music; that singing is using our natural voices with which to make music; and that the sounds of birds, wind, water, animals, etc., are used by composers in making music.
6. The ability to recognize high and low tones, long and short tones, loud and soft tones.
7. The ability to know the difference between a melody "going up" and a melody "coming down".
8. The ability to recognize like and unlike parts in a melody.
9. The ability to recognize short and long steps in a melody.
10. A feeling for "key tone" or tonic in the major mode.
11. The ability to hold in mind a melodic figure or phrase and repeat it vocally after hearing it.

12. The ability to respond to regularity of pulsation or beat in rhythm, fast and slow tempos, accented and unaccented beats in both double and triple measures, and the musical phrase.
13. The beginning of a reading vocabulary by associating sound and syllables through singing simple pitch groups by imitation, associating syllables with the simple pitch figures in familiar songs, singing syllables as a second verse to a simple scale or chordline song, and associating syllables with melodies played on water glasses, bells, marimbas, or tuned bottles.
14. Develop an interest in musical notation by looking at attractive music books, and watching others make music by playing and singing from the printed score.
15. Begin the visual discrimination of symbols used in musical notation such as staff; kinds of notes; sharps; flats; patterns moving line, space, line, space; and patterns all on lines or spaces.

Playing Instruments

1. Discriminate aurally between the tone qualities of instruments in the percussion band.
2. Discover ways of changing the tone quality of simple instruments played such as (a) the tone of different kinds of wood; (b) how a drum, water glass, or marimba sounds when played with a mallet of wood, rubber, or felt; (c) how the tone of a glass may be changed by placing the glass on a base of wood, cloth, or paper.
3. Develop the ability to play rhythmically in unison.
4. Develop the ability to produce simple sound effects on percussion instruments as an appropriate portrayal of the music.
5. Use appropriate percussion instruments to accompany songs sung by the class such as rhythm sticks for a pony or donkey song, triangles for a train song, drums with Indian songs, etc.
6. Play simple melodies by rote on the water glasses, marimba, or bells.

Listening to Music

1. Develop the power to identify natural sounds heard in music which are familiar to the children such as the sounds of toys, clocks, birds, wind, water, etc.
2. Develop the power to identify movements heard in music such as skip, gallop, run, jump, skate, swing, brook, fountain, etc.
3. Develop the ability to recognize like and unlike parts of a melody.
4. Develop the ability to recognize by sound the drum, violin, cornet, and flute.
5. Develop the ability to distinguish between high and low voices, and voices of men and women singing.
6. Build a memory repertory of simple, but well-known compositions such as "America", "America, The Beautiful", "To a Wild Rose", etc.
7. Develop the power to identify the more obvious moods in music such as lullaby, dance, march, humor, etc.
8. Develop the power to recognize familiar songs when the melody is played or hummed without words.
9. Hear music related to familiar phenomena such as animals, growing things, home, school, play, make-believe, etc.
10. Develop the habit of listening attentively and without distraction to others.
11. Listen attentively to discover the parts of music which reflect the ideas of a story with which the children are acquainted.
12. Develop the power to select appropriate music which reflects the mood of a poem or picture.

SUGGESTED OUTCOMES AND ACTIVITIES FOR GRADE TWO

Singing

1. Review the favorite songs learned in Grade One.
2. Continue building a repertory of children's song literature around the interests of children at this age level.
3. Learn additional songs related to special days and occasions such as Halloween, Thanksgiving, and Christmas.
4. Develop an appreciation of the musical qualities in good singing such as tone, cooperation in singing together, appropriate tempo, enunciation and pronunciation, etc.
5. Sing songs related to interests studied in other school subjects such as community helpers, travel, communication, etc.
6. Continue development of the power to sing in tune.
7. Continue emphasis on singing in a manner acceptable to the poetry or thought in the song.
8. Develop the power to discover the relation between words and music as reflected in rhythmic movement and the relation between the inflection of spoken words and the direction of the melody.
9. Continue the development of independence in singing by singing alone, in small groups, and singing at home.
10. Develop the power to recognize familiar songs by hearing the melody hummed or played.
11. Develop the power to recognize familiar melodies from hearing the rhythm of the song "tapped" or sung with a neutral syllable at a sustained pitch.
12. Learn to recognize the measure grouping of familiar songs. This will include songs in double, triple, and quadruple measure.
13. Learn, by memory, songs which may be used in group singing by all grades combined.
14. Continue the enrichment of songs through directed activity in dramatization, painting or drawing pictures to illustrate the song, and through telling stories related to the song.

15. Learn, by rote, simple scale-line and chord-line songs which may be used in building a reading vocabulary by singing the syllables as a second verse.
16. Sing songs about musical instruments which may be utilized as an incentive for further interest in instruments such as the fiddle songs, songs about drums, songs about the band, etc.
17. Play games which utilize interpretative responses in singing appropriate to the thought of the songs such as playing "echo," imitating the wind, whistles, "Cherries Are Ripe," etc.
18. Continue development of the power to recognize like and unlike phrases of a song, high and low tones, ascending and descending progressions and a feeling for "home tone".
19. Use simple and appropriate accompaniments to songs which are created and played by the class. This will include appropriate sound effects played on percussion instruments, bells, marimba, water glasses, drums for Indian songs and marching songs, and the like.
20. Draw "pitch pictures" on the blackboard of melodic figures which appear in familiar songs.

Rhythm

1. Continue the development of free, bodily expression of rhythm through expressing the character, or mood of the music.
2. Continue development of the power to recognize and express in appropriate movement, characteristic rhythms such as sway, skip, march, dance, gallop, hop, high stepping horses, fairies, dwarfs, clowns, etc.
3. Continue the development of a response to regularity of beat through such activities as marching, clapping, marking on the blackboard, and playing percussion instruments. Use music in which the regularity of beat is (a) fast, moderately fast and slow; (b) intense and vivid or smooth and indefinite; (c) the beat moves through a sustained sound; (d) retards and accelerates; and (e) syncopated.

4. Continue the development of a response to accented and unaccented beats in double, triple, and quadruple measure through physical activities such as clapping loud and soft beats, marking long and short marks on the blackboard, bouncing rubber balls, and by one section in the percussion band playing the accented and another section the unaccented beats.
5. Continue the development of a response to the phrase rhythm through having the children raise and lower their hands; march and turn at the end of the phrase; divide the class—clap and rest alternate phrases; and draw phrase pictures on the blackboard.
6. Learn to count softly “one-two”, or “one-two-three”, to accented and unaccented beats in double, triple, or quadruple measure, as the music is played or sung.
7. Use the percussion band for further experience in developing a response to regularity of beat, accent, and phrase.
8. Use easy folk dances and singing games. Express through the activity a feeling for pulse, accent, and phrase rhythms.
9. Give continued experience in responding to variations of the beat such as fast, slow, ritard, rubato, and syncopation.
10. Through rhythmic activity, begin the development of an understanding of musical form. When a melody is repeated the activity likewise repeats. Develop appropriate activities for two-part form “A B, A B”, etc. Also for three-part form, “A B A”.

Music Reading

1. Continue to give wide experiences in music by singing songs, listening to music, rhythmic activity, creative expression, and playing simple instruments as a background for the later reading of musical symbols.
2. Create a desire to read music through such agencies as (a) watching others use books and other printed musical material; (b) looking at the notation of songs sung by the class on charts, blackboard, and in music books; and (c) making scrap books of musical materials.

3. Continue building an aural vocabulary for music reading through developing an association between sound and syllable names using (a) pitch groups sung by imitation; (b) singing syllables as a second verse (by rote) to a simple, familiar melody; (c) associating syllable names with simple pitch figures which occur in familiar songs; and (4) singing syllables to simple melodies played on water glasses, marimbas, psalteries, etc.
4. Test the connection between sounds and syllables by (a) calling syllables; (b) aural pitch recognition; (c) neighboring tones; (d) trinal ladder, etc. (See the section on music reading in "Special Helps in Teaching Music.")
5. When the aural connection between simple sounds and syllable combinations has been well established introduce the first reading of staff notation through the use of a familiar song, or pitch groups.
6. Recognize quickly simple pitch combinations through the use of flash cards and other visual devices.
7. Recognize quickly pitch combinations with *do* in several key positions.
8. Teach the children to write pitch combinations (using whole notes) with *do* in several positions.
9. Develop the ability to read simple four measure duration patterns employing quarter, half, and dotted-half notes in two-four and three-four measures. Duration patterns should be used both alone and in connection with pitch.
10. Teach the children the meaning of simple musical symbols used in musical notation such as *clef*, *staff*, *note*, *single-bar*, *double-bar*, *quarter note*, *half note*, *measure signature*, *lines*, *spaces*, etc.

Listening

1. Give an opportunity to hear an abundance of simple music played on instruments, records, radio, and by hearing others sing.
2. Develop the ability to distinguish between rhythmic movements in music such as skip, march, gallop, run, clock, fairies, dwarfs, elephants, hobby horse, clowns, and other rhythmic phenomena familiar to the children.

3. Develop the ability to distinguish between obvious moods such as quiet, excited, joyful, sleepy, etc.
4. Listen to discover whether the instrument is played by blowing, bowing, striking, or plucking.
5. Listen to discover whether the sound is produced by metal, string, wood, or skin.
6. Identify by sight, sound, and name the cornet, flute, violin, 'cello, harp, clarinet, trombone, and French horn. Learn some interesting things about these instruments.
7. Learn to correlate the mood of a piece of music with a poem or picture. Show two pictures with contrasting ideas such as a calm sea, and a stormy sea. Play music descriptive of a calm or a storm and ask the children to identify the music with the proper picture. Do the same with contrasting poems.
8. Begin the acquaintance of the composer through his music. Use materials at the level of the children's interest. Use Schumann, MacDowell, and Mendelssohn.
9. Continue to discover how natural sounds are utilized by composers in music making. How are the sounds of birds, insects, wind, water, machinery, toys, animals, etc., utilized by the composer?
10. Listen to discover repeated and contrasting tunes in a piece of music. Express these contrasts and repetition through mimetic play.
11. Play games to music which express an awareness of high and low tones, melodies "going up" and "coming down".
12. Continue the orchestrating of music with the percussion instruments to develop an appreciation for the appropriateness of tonal and rhythmic effects.
13. Listen to music associated with a story. Use of "A Tailor and a Bear", parts of the "Nutcracker Suite", "In the Hall of the Mountain King" from "Peer Gynt", etc.
14. In connection with music studied, learn to identify it by name and composer.

Playing Instruments

1. Play simple melodies on water glasses, bottles, marimbas, psalteries, and pan-pipes.

2. Encourage the making of creative melodies on these instruments.
3. Learn to cooperate in the playing of several of these instruments in unison.
4. Learn to assist the teacher in tuning the water glasses or bottles to the pitch desired.
5. Have experience in the study and making of simple instruments such as drums, rattles, and rhythm sticks.
6. Make up accompaniments to songs and music pantomimes, using drums, triangles, tambourines, rhythm sticks, and other instruments appropriate to the music.
7. Consider the way in which various instruments produce sound. For example, discover that the psaltery produces sound by a string vibrating on a box. What standard orchestra instruments make sounds in this manner?
8. Create sound effects with instruments to songs sung by the class. Use triangles for train songs, rhythm sticks for pony songs, drums and rattles for Indian songs, etc.
9. Find interesting sound-making materials at home and around the school which might be used as an instrument in the grade band.
10. Tune the melody instrument to play simple parts of songs sung by the class such as "Whip-Poor-Will", "Cherries Are Ripe", "The Echo", etc. These will usually be in the form of three or four tone figures frequently repeated.
11. Find pictures or make a music book of musical instruments that you know. Write in the book some interesting things that you have found about these instruments.
12. Play some music for the class on an instrument you are learning outside of school.
13. Play a simple melody on one instrument and make up a "second part" on another instrument that goes well with the first part.

SUGGESTED OUTCOMES AND ACTIVITIES FOR GRADE THREE

Singing

1. A repertory of forty to sixty new songs in the year, related to the interests of this age group.
2. Continue to develop power in singing in unison with the class.
3. Encourage independence in singing through singing individually and in small groups.
4. Increase the power to repeat accurately a phrase or figure of a song sung by the teacher or heard on the phonograph.
5. Develop increased power to apply attention and effort to the task of singing, as well as other desirable work habits demanded by the act of learning and singing a song.
6. Encourage the creative interpretation of songs expressing such things as appropriate tempo, tone coloring, and other aspects of desirable interpretation.
7. Encourage the proper use of a light tone quality.
8. Learn to use song books in following both the words and the notes of songs learned by rote.
9. Learn songs related to the units of work developed in Grade Three.
10. Develop simple units of work in music to which song learning may be related. Use such ideas as "Motion in Music" and learn songs descriptive of the motion of water, wind, animals, insects, etc. Other units might include "Music of Other People", "Music About Work", "Animals in Music", "Music and Make-believe", etc.
11. Make provisions for singing at home and with children in other grades.
12. Learn some simple scale-line and chord-line songs by rote which may be later used for observation in building skills in reading music.

13. Develop further the power to see the relation between the rise and fall of the voice in speech and the rise and fall of the melody in a song.
14. Provide opportunities for the class to create original songs.
15. Introduce the singing of simple part music by rote using the simplest of descants or songs utilizing an occasional combination of sounds in thirds.

Rhythm

1. Continue to give opportunity for spontaneous rhythmic activity in which the children reflect appropriately, through bodily activity, such responses as dwarfs, elephants, picking flowers, swaying trees, flying birds, boating, marching, etc.
2. Make provision for continued development of a feeling for regularity of beat using fast, moderate, and slow rhythms; gradually faster and gradually slower; syncopated rhythms; and rhythms in which the beat is indefinite.
3. Develop the ability to discriminate between double and triple groupings of accented and unaccented beats. Use activities such as clapping "loud, soft", and "loud, soft, soft", bouncing rubber balls to accented beats, marking to the rhythm of music on the blackboards—observing accented and unaccented beats, and clapping "first and second violins"—one group clapping the accented and another group the unaccented beats.
4. Continue development of a response to the musical phrase and cadence by having the children raise and lower their hands—changing direction at the end of the phrase; march in a circle—reversing direction at the end of the phrase; divide into two groups—clap and rest phrases alternately; and draw lines on the blackboard to represent the phrase as the music is played or sung.
5. Make orchestrations for a percussion band in which regularity of beat, accented and unaccented beats, and phrase rhythms are observed.
6. Reflect through physical activity the mood of the music such as quiet, sad, gay, smooth, awkward, vigorous, etc.

7. Use standard singing games as a way of experiencing regularity of beat, measure groupings, and phrase rhythms.
8. Observe, through physical activity, sounds of long and short duration.
9. Learn to recognize familiar songs from the pattern "tapped" or sung with a neutral syllable by the teacher.
10. Learn to discriminate through hearing, the movements portrayed in music related to familiar experiences such as wind, sea, brook, fountain, flying birds, clocks, dolls' dance, run, skip, toy march, etc.
11. Begin to see simple relationships between obvious speech rhythm and the rhythms of music through such avenues as noting that the rhythm of singing poetry is the same as in speaking poetry, that poems have regular beats which may be clapped, that poems have accented and unaccented beats, and that the line of a poem is like the phrase in music.
12. Note that the cadence at the end of a musical phrase is a "breathing place" like the periods and commas in language.
13. Experience, through rhythmic activity, the simple patterns of musical form such as two-part song form "A B, A B", and three-part song form "A B A".
14. Learn to read simple duration patterns in two-four, three-four, and four-four measures. Use common combinations of quarter, half, dotted-half, and whole notes. Duration patterns should be read both separately, in four measure phrases, and together with simple pitch patterns.
15. Learn to recognize and write from dictation, duration patterns employing the quarter note and its multiples in two-four, three-four, and four-four measures.
16. Introduce the reading of the quarter rest, both on one and more than one beat.
17. Learn the meaning of the measure signature, both the upper and lower numbers.
18. Learn to apply accented and unaccented beats in singing and playing in all measure signatures used in this grade.
19. Learn the meaning and use of both the single and double **measure bars**.

20. If the children in Grade Three can read simple duration fluently using quarter, half, dotted-half, whole notes, and corresponding rests, they may then be introduced to the reading of the equally divided beat.

Reading

1. Continue the development of an automatic association of pitch-sounds and syllables employing all common combinations of scale and chord progressions. Present all unfamiliar pitch combinations through an imitative agency such as a familiar rote song, pitch groups, or sequentials.
2. Drill for rapid recognition of pitch and syllable relationships through "calling" syllable combinations to be sung by the class; by recognition of the syllables of simple pitch combinations sung with a neutral syllable by the teacher; and by pointing to syllables written in the form of a "ladder" on the blackboard; etc.
3. Give experience in simple modulation, using first, modulation to the dominant (*sol*). Sing up or down the scale or chord to *sol*. Sing *sol* several times. Change *sol* to the syllable *do*. Sing several pitch combinations in the new tonality.
4. Read an abundance of interesting song material which employs simple scale and chord progressions in combination with quarter, half, dotted-half, whole notes, and corresponding rests in two-four, three-four, and four-four measures.
5. Teach the meaning of the upper and lower numbers of the measure signature.
6. Teach the location of *do* from the last sharp and the last flat.
7. Use flash cards for development of rapid recognition of common pitch figures such as *do sol do*, *do ti la ti do*, *do sol mi do*, etc. Construct sets of cards with the key tone in several positions on the staff.
8. Develop skill in writing pitch combinations on the staff from dictation. Write the pitch groups with *do* in several positions.

9. Develop the power to keep accurate "time" while reading. The child should be able to mark the beat regularly with the hand as he reads.
10. Develop the power to first read the song by syllable, then *think* the syllable and sing the melody with "loo", then sing the song with the words.
11. Make use of the power gained in the use of musical symbols to write original melodies. Begin by making short melodies such as the music to be written on greeting cards like "Happy Birthday", "Be My Valentine", "Merry Christmas", etc.
12. If power in the reading of a single melodic line is well established before the end of the year, begin reading material in which the voices separate into "parts". Use reading material which separates into an occasional third such as *sol mi*, *do la*, or *do mi*. Give experience in "chord-ing" by dividing the group—one group sustaining *do* while the other sustains *mi*.

Music Listening

1. Learn to identify music with the way in which people live. This should be correlated with units of work in social studies in this grade. Through listening discover that the aspects of life which affect man are expressed imaginatively in his music. Such things as the kinds of food people eat, warm or cold climates, clothing, the work the people do, etc., are reflected in the kinds of songs they sing and the kinds of music they use for dancing.
2. Find interesting information about the music of the people studied such as: "Who are their great composers?" "What are some famous pieces of music these people have given to the world?" "What instruments do they use most?"
3. Learn to discriminate between music which has come from cold and warm countries, flat and mountainous countries, lands where people are happy or sad, people that are large and strong or small and graceful.
4. Learn to identify by sound the characteristic tone qualities used in making instrumental music such as the sound

of metal, reeds, strings, brass, skin, etc. Learn to identify a few common musical instruments by name, sight, and sound. Learn some interesting things about these instruments.

5. Continue to improvise appropriate tonal accompaniments to songs sung by the class through the use of percussion instruments.
6. Develop the power to recognize repeated and contrasting melodies used in short musical compositions.
7. Associate musical compositions heard with the mood of pictures, poetry, or stories. Musical examples will include such compositions as "To the Sea" and "To a Wild Rose" by MacDowell, "March of the Lead Soldiers" by Pierne, and "By the Brook" by Boisdeffre, etc.
8. Develop a unit on movement in music in which the music is identified with movements familiar to the children. Some common movements represented in well known music are brooks, wind, lakes, fountains, ocean, music box, clocks, birds in flight, chasing, hopping, gallop, etc.
9. Study the lives of several composers through their music. Composers who have written music of interest to children in the lower grades are Grieg, MacDowell, Mendelssohn, Nevin, Foster, Schumann, and Tschaiowsky.
10. Learn to discriminate between types of voices. The children in this grade should recognize by sound, the soprano, contralto, tenor, and bass voices.
11. Listen to some of the interesting folk music of America. Use examples of the Negro, Indian, cowboy, mountaineer, and rivermen songs.
12. Be able to recognize several kinds of marches. These will include examples of the military, toy, funeral, wedding, and various animal marches.

Playing Instruments

1. Arrange programs which give the children in the group, who are studying instruments out of school, an opportunity to play for their classmates. Encourage the children to discuss the musical qualities of these recitals.

2. Continue to play more advanced melodies on the instruments used in the earlier grades such as water glasses, bottles, bells, marimba, and psaltery. Utilize these instruments in connection with the music reading program. In this grade these instruments should be tuned to the eight tones of the major scale.
3. Play simple music in parts on these instruments. Use simple descants with familiar melodies. Play two instruments, using intervals in "thirds" and "sixths".
4. Introduce the playing of a simple wind instrument such as the tonette, song-flute, or harmonica.
5. Organize the variety of instruments studied into a class orchestra as soon as sufficient proficiency is gained in playing melodies on each instrument separately. Use simple percussion instruments such as drums, triangles, and tambourines to accompany the melody instruments.
6. Show the use of the tonic and dominant chords in an accompaniment to the melodies played. Use the piano or autoharp for this purpose.
7. Give additional opportunity to aid in the construction of simple instruments such as drums, marimbas, sand-blocks, etc.
8. Encourage the creative making of melodies and part music on the instruments used.
9. Develop essential disciplines in playing instruments together such as strict attention to playing together, to stop playing when the director asks for attention, etc.
10. Continue to utilize the instruments learned—both melodic, percussion, and chord instruments—in making original accompaniments to songs sung by the class.
11. Keep a scrap-book in which pictures of instruments are included with interesting information collected about them. Describe creative instruments made by the class.
12. Review the orchestral and band instruments which were studied in the previous grades. They should include the violin, piano, cornet, flute, bass-drum, etc. Add other instruments to study such as the 'cello, trombone, harp, xylophone, chimes, clarinet, etc. Learn to recognize these instruments by sight, sound, and name.

SUGGESTED OUTCOMES AND ACTIVITIES FOR GRADE FOUR

Singing

1. Review the songs learned in Grade Three which the children enjoy singing.
2. Learn from forty to sixty new songs in this grade.
3. Learn some of the traditional songs associated with the state, nation, and special days and occasions such as "Prayer of Thanksgiving", "Harvest Home", "Colorado", "Star Spangled Banner", "Angels We Have Heard on High", "Deck the Halls", "Vacation Song", etc.
4. Continue to develop an appreciation for musically artistic results in singing such as good tone, clear enunciation, correct pronunciation, phrasing, performing in strict unison, etc.
5. Sing songs related to national holidays, national events, and contemporary songs which reveal the sentiments of the people.
6. Sing songs which reflect the lives of people in other lands. Use such songs as "Children of Kildare", "Cielito Lindo", "The Keeper", "Galway Piper", etc.
7. Sing songs about occupations and how people work. Include a song of the cowboy, mountaineer, rivermen, sailor, lumberman, farmer, blacksmith, etc.
8. Learn some songs which are used with folk dances.
9. Find and sing songs which are musical settings of favorite poems of this grade.
10. Sing descants, rounds, and simple songs using "thirds" and "sixths" as a preparation for part singing.
11. Give the class an opportunity to share with other people in the community their results in artistic and expressive singing.
12. Give opportunity in this grade for the development of individual solo voices. Allow children with exceptional talent to sing for others in the school and community.

13. Develop alert work habits in learning a new song and in singing with others in an ensemble.
14. Teach some of the simple fundamentals of good vocal usage such as correct breathing, using an open and relaxed throat, and correct posture.
15. Assist in developing an understanding of the different cultural groups studied in the class through singing their songs.
16. Continue to observe the relation between words and music by noting how the music portrays feeling or moods and how the melody follows the inflection of the voice when the poem of the song is spoken rather than sung.
17. If possible sing in the native language some of the songs of the cultural groups studied.
18. Introduce the singing of many rote songs in the minor mode as a preparation for more accurate reading of music in this mode.

Rhythm

1. Dance folk dances and use action songs and singing games related to the culture groups studied in this grade.
2. Use percussion and simple melodic instruments to accompany the folk songs and dances studied. Construct instruments to use and learn to play them in the fashion employed by the people who created the song or dance.
3. Develop rhythmic activities which reflect an understanding of form in music such as the two-part song form "A B", three-part song form "A B A", or rondo "A B A C A".
4. Be able to recognize quickly double, triple, and quadruple measures when heard in a song or played on an instrument.
5. Be able to tap—without music—double, triple, and quadruple measures with correct regard for accented and unaccented beats.
6. Express the rise and fall of melodic line through bodily rhythms.
7. React quickly to the musical phrase by raising and lowering the hands, marching and turning at the cadence, drawing phrases on the blackboard, and clapping and resting phrases alternately.

8. Be able to maintain regularity of beat in singing, playing, and bodily activity, when the tempo is either fast, moderate, or slow.
9. Be able to sing, play, and otherwise respond to rhythms which move gradually slower and gradually faster.
10. Be able to recognize a great variety of characteristic rhythms from music heard such as several types of marches and dances, swaying, water, wind, animals, etc.
11. Develop the ability to sustain accurately a sound played or sung for an indicated number of beats. This usually entails work of the drill type if accuracy is expected.
12. Be able to sing fluently all musical arrangements of quarter, half, dotted-half, and whole notes and corresponding rests in two-four, three-four, and four-four measures, both separately in four measure phrases and in connection with simple melodies. This should be a continuation of the duration problems taught in Grade Three.
13. In some music programs the children in the preceding grade will be introduced to the reading of the equally divided beat, but in most schools this will be a problem for the fourth grade.
14. Present the first reading of duration with the eighth note as the beat note in six-eight and three-eight measures. Use common combinations such as the eighth, quarter, dotted-quarter, the tied dotted-quarter notes and corresponding rests.
15. When the equally divided beat can be played and sung fluently with eighth notes in quarter measure, introduce the reading of the equally divided beat in six-eight, and three-eight measures. Use the combinations which occur frequently such the quarter and two sixteenth notes, eighth two sixteenths and an eighth, etc.
16. All rhythm patterns, after being taught, should be recognized and written from dictation in two and four measure phrases. All drill work of this type should be closely related to the task of reading these patterns in actual music.

Music Reading, Writing, and Theory

1. Work for a rapid connection of sound and syllable names for all common scale and chord-line figures. This association must become automatic if the reading vocabulary in music is to function. Since these common patterns have been previously presented through imitative agencies in the earlier grades, work for rapidity should be emphasized in this grade. Use "calling syllables", "aural pitch recognition", the "musical ladder", "neighboring tones", and "sequentials" in developing this automatic connection.
2. Develop skill in the rapid recognition of syllable names and note combinations as they appear on the staff. In this grade, recognition of syllable patterns from notes should become rapid. This will be achieved through the reading of an abundance of simple music supplemented with occasional drill on note recognition, using such devices as flash cards, recognition of note combinations written on the blackboard by the teacher, and through writing pitch combinations dictated by the teacher.
3. In addition to rapid development in reading simple scale and chord-line music, this grade should be taught to read one or two of the most common chromatics. These will include the raised scale tone *fi* and the lowered scale tone *te*.
4. The pitch problems outlined above should be read in connection with all of the duration problems presented in the earlier grades and, in addition, in six-eight and three-eight measure, using the common duration patterns in these measures listed in the previous section.
5. The equally divided beat will either be introduced in this grade or in Grade Three. At the conclusion of Grade Four the children should read accurately all common combinations of the equally divided beat in two-four, three-four, four-four, six-eight and three-eight measures.
6. Include continued development of reading songs in minor. Proficiency in the use of the minor mode is established by following the steps suggested in developing proficiency in reading songs in major.

7. Give experience in reading music by playing on instruments as well as by singing.
8. Use the increased skill in reading to independently learn songs for enjoyment. The class will desire to sing some song material which is too difficult for the reading skills developed in this grade. In this event, the children should read the portions of the song which their background makes possible.
9. After the aural readiness for part music is well established through the learning of descants, rounds, "chording", hearing music in parts, and learning part songs by rote, emphasis should be placed on the reading of part music independently.
10. Opportunity should be given for the creation, writing, and reading of original melodies by the class.
11. Motivate the creative writing of music by making an original play with music, by writing music on greeting cards, etc.
12. Attempt to write original melodies which follow the rhythms and pitch inflections of spoken sentences.
13. Learn the names of all notes employed in music reading such as quarter, half, dotted-half, eighth, sixteenth, and corresponding rests.
14. Learn the letter names of the lines and spaces of the treble staff using several added lines and space above and below the staff.
15. Learn to place one to four sharps and one to four flats on the treble staff. Do this following the teaching of the letter names of lines and spaces. Learn that the first four sharps are placed on the letters F C G D, and the first four flats on B E A D.
16. Be able to name the key when the key signature is given for both major and minor keys. The letter name of the line or space upon which *do* is located is the name of the major key, and the letter name upon which *la* occurs is the minor key.
17. Know the syllables of both the major and minor scales and the major and minor tonic chords.

Listening

1. Hear music on the radio and phonograph, and sing songs related to the people studied in this grade.
2. Continue to recognize descriptive elements in music such as descriptive sounds, movements, and moods. Identify these with familiar experiences.
3. Develop a familiarity with famous music through listening. Be able to name the title and the composer of music studied in class.
4. Study the folk songs and composers of the United States. The folk music will include music of the pioneers, Negro, cowboy, rivermen, lumbermen, railroad men, Indians, mountaineers, and the composed folk music by composers such as Stephen Foster, etc. The American composers studied in Grade Four should include MacDowell, Lieurance, Cadman, Nevin, and Foster. Give particular attention to the composer who has used the themes of American folk songs as the basis for his music.
5. Continue to observe the ways in which circumstances of life and environment are reflected in the music of a people. What influence does the climate, landscape, work, dress, food, etc., have upon the music of the people studied?
6. Develop a unit on the study of singing and singers. Learn that we like some songs for their story, some singers for the way they make the song "talk", some for their fine voices, some for the "stunts" they use in singing, etc. Be able to name from hearing, such voices as coloratura, bass, baritone, tenor, contralto. Hear some of the famous singers on the radio and discuss them with reference to the things learned in class.
7. Study some orchestral music which tells a story, or gives vivid description, such as parts of "Peer Gynt Suite" by Grieg, "Sorcerers Apprentice" by Dukas, "Carnival of the Animals" and "Danse Macabre" by Saint-Saens.
8. Continue the study of instruments of the orchestra. Review those studied in previous grades and add others such as celesta, bells, viola, string bass, oboe, bassoon or tuba. Make reports on information concerning the instruments. Study what instruments are used in descrip-

tive music such as the "Music Box" by Liadow, "The Swan", and "Elephants" by Saint-Saens, etc.

9. Study elementary form in music. Learn to recognize "questions and answers" in a musical sentence, half and full cadences, repeated and contrasting melodies or themes. Know the meaning of two part song form "A B" and three part song form "A B A".
10. Learn something about the native musical instruments used by the people studied. In the case of simple instruments, attempt to make some of the instruments and use them in playing the simple music studied and as accompaniment to the songs of the culture group studied by the class.
11. Distinguish between the waltz, minuet, gavotte, and other simple dance forms.
12. Develop a unit on listening around a central thought which is of interest to the class such as "How have the simple sounds and movements of things around us been used in making music?" "What composers wrote music especially for boys and girls?" "How have composers used folk songs and dances in their music?" "What are some famous legends which have been described in music?"

Playing Instruments

1. Continue to play melodies on the instruments learned in the earlier grades such as water glasses, psalteries, bells, marimbas, tönettes, song-flutes, etc.
2. Give experience in making a simple instrument such as a five-tone marimba.
3. Work out appropriate combinations of these instruments for use as accompaniments to songs sung by the class.
4. Emphasize the disciplines essential to playing together such as alertness to keeping together, intense mental application, listening carefully to the directions given by the leader, etc.
5. Utilize the instruments learned in playing the melodies studied in the music reading work.
6. Encourage small groups of children to work out original arrangements of music independently at home or during free activity periods.

7. Learn to use the tonic and dominant chords at the proper places in melodies played and sung by the class. Use these chords on the piano, autoharp, or by playing "parts" on marimbas or psalteries.
8. Write a simple part to be played by children who are learning to play instruments out of school. These will usually include the violin, cornet, and clarinet.
9. Make an exploratory study of standard instruments which can be played by fourth grade children. Consider such items as difficulty in playing, physical characteristics essential to playing, the extent to which a certain instrument is used—can it be played in the band, orchestra, small ensembles, and for solos? It will be found that the instruments most readily learned by this age group are the violin, cornet, clarinet, and piano.
10. Provide opportunities for class recitals on instruments learned outside of school.
11. Use instruments to accompany simple pantomime or dances created by the class.
12. Continue the appreciation study of instruments of the band and orchestra started in previous grades. Prepare reports on information found concerning instruments, artists, and concerts. Keep a scrap-book prepared by the class.
13. Make a list of the favorite instrumental recordings studied during the year. Give a copy of these choices to the fifth grade teacher.
14. Read the story of the violin makers of Cremona.

SUGGESTED OUTCOMES AND ACTIVITIES FOR GRADE FIVE

Singing

1. Sing for enjoyment the favorite songs learned in previous grades.
2. Continue building a repertory of song literature adding forty to sixty new songs during the year.
3. Become increasingly sensitive to the qualities of expressive singing such as the use of beautiful tone; coloring the tone appropriate to the mood, feeling, or ideas portrayed in the song; a regard for phrasing; use of appropriate tempo; clear enunciation; and correct pronunciation.
4. Learn several standard art songs by well-known composers such as "On Wings of Song" by Mendelssohn, "Cradle Song" by Schubert, "Minuet in G" by Beethoven, etc.
5. Sing songs related to the centers of interest for Grade Five. Study the circumstances of the environment in an attempt to assign an appropriate meaning to the words and emotional suggestion of the song.
6. Become increasingly sensitive to the relation of words and music. Observe how the music portrays the meaning of the text, and how the melody follows the inflection of the voice when the poem is spoken rather than sung. Note further that important words and syllables occur on accented beats in the measure and unimportant words and syllables on the unaccented beats.
7. Practice and learn to apply some of the principles of good voice production to singing. Use good posture, open and relaxed throat, sustained diaphragm breathing, etc.
8. Sing many songs related to seasonal interests, holidays, national events, religion, and other topics of immediate interest to this age level.
9. Continue the singing of simple part music both by rote and through reading. Use descants, rounds, and part songs. Learn some "popular favorites" in two parts to use in

programs or the school choir such as "Sundown" (Londonderry Air), "The Green Cathedral", "I Love a Little Cottage", "Bells of St. Mary's", etc.

10. Learn songs which employ added musical difficulties such as the use of chromatic tones, songs in the minor mode, fairly long songs, songs with syncopated rhythms, etc.
11. Sing in parts the basic triads used in the songs learned. For tonic chord sing *do mi sol* and sustain each part. Do the same for the dominant *sol ti re*, and the sub-dominant *fa la do* triads. Discover the places in the melody where these chords may be used.
12. Learn songs which may be used with singing games or folk dances.
13. Express as much independence as possible in learning new songs for enjoyment from the printed score.
14. Plan together the ways in which the singing of the favorite songs of the class may be shared with others in the school, home, and community.
15. Learn several selections of sacred music which may be sung by the class at one of the local churches.
16. Give children with exceptional talent for singing opportunities to sing solos or duets and trios with other talented children in the school.
17. Make a continued study of the songs of Colorado. This will include the state song, songs of cowboys and miners, Spanish-American, Indian, and the songs of other culture groups familiar to the children.
18. Encourage the fifth grade to promote school unity by finding opportunities for the entire school to sing favorite songs together. This may be accomplished through the school assembly or through occasional singing in the halls before the morning classes.
19. Find and sing songs of historical interest to Colorado such as pioneer, homesteading, mining, and prospector songs and songs of the range.
20. Make a list of the favorite songs learned in Grade Five. Give a copy of this list to the sixth grade teacher at the close of the year.

Rhythm

1. Learn some of the folk dances of interest to this age level. Associate, in part, with the social and historic understanding of Colorado. Learn a pioneer dance, a Spanish dance, an Indian dance, and a cowboy dance.
2. Create new dances to favorite music. Observe the measure rhythm (accented and unaccented beats), phrasing, repeated and contrasting themes, cadences, etc.
3. Develop an accurate physical response to syncopated and rubato rhythms.
4. Step the duration patterns employed in songs sung by the class. Use long steps and pauses for long tones, and short, rapid steps for short tones. As note values are "stepped" a part of the class should clap the underlying beat rhythm.
5. Review the duration patterns presented in the preceding grades. Use these patterns in music reading and playing on instruments. At the conclusion of grade four the children should be able to read all common combinations of quarter, half, dotted-half, whole, and corresponding rests in two-four, three-four, and four-four measures; the same note and rest values in six-eight and three-eight measures; and combinations of the equally divided beat in the measures listed above.
6. Present the reading of the dotted-beat-note. The most common pattern is the dotted-quarter followed by an eighth note in two-four, three-four, and four-four measures. Show the derivation of the dotted-beat-note from the equally divided beat.
7. Be able to recognize from the sound all duration patterns studied and be able to write these patterns in four measure phrases when dictated by the teacher.
8. Present the reading of simple syncopation. The simplest form of syncopation is the eighth-quarter-eighth in double or quadruple measures.
9. Read simple arrangements of the dotted-beat-note in six-eight and three-eight measures.
10. Drill for automatic recognition of duration patterns by using flash cards, the "block" rhythm device on the blackboard, and by dictation.

Music Reading, Writing, and Theory

1. Review the reading material presented in the preceding grade.
 2. Develop fluency in reading by reading an abundance of easy music material.
 3. Be able to write quickly pitch patterns sung or played by the teacher, using whole note without a measure signature.
 4. Be able to write simple four measure melodies sung by the teacher. Write in a variety of keys.
 5. Learn to read fluently, recognize quickly by sight, and to write from dictation pitch figures which employ the chromatic tone *fi* and *te*.
 6. Teach the elementary theory related to the raised and lowered scale tones. Learn for example, that:
 - fi* is used in place of *fa*;
 - fi* is one-half step higher than *fa*;
 - fa* is on f natural (depending on the key)Therefore, *fi* will be on f sharp.
- Note: In applying the above rule, it is necessary for the class to know what the natural, sharp, and flat do as accidental signs in raising and lowering scale tones when a natural, sharp, or flat occurs in the signature.
7. Teach, as pitch groups, the most common melodic patterns which occur when *fi* or *te* are used. These will include such patterns as *sol fi sol*, *sol fi mi*, *do sol fi la sol*, *mi fi sol*, *la te la*, *do te la*, *do sol te la*, etc.
 8. Read all new pitch and duration problems in much song material.
 9. Learn the meaning of dynamic markings and other signs used in connection with music such as *allegro*, *dolce*, *p*, *f*, *mf*, *repeat sign*, *hold*, *slur*, *D. C.*, *D. S.*, etc.
 10. Sing many part songs in which the music is read by the class.
 11. Use the creative efforts of the class to gain skill in writing and reading musical notation.
 12. Learn to recognize major and minor songs by sight. Major songs usually end on *do* and minor songs on *la*.

13. Continue to develop an automatic connection between sound and syllable combinations in the minor mode.
14. Be able to name both major and minor keys from the location of *do* or *la*.
15. Study the arrangement of half steps and whole steps in both the major and minor scales.

Music Listening

1. Continue to build a repertory of famous music through listening. Remember the names of the compositions and composers.
2. Develop the power to identify music with familiar descriptive sounds, movements, and moods.
3. Learn to distinguish between music which imitates, suggests ideas and feelings, pure music, and narrative (music that tells a story).
4. Learn the meaning of terms which assists the listener in understanding the import of the composition. These terms will include *serenade* (love song), *scherzo* (joke), *nocturne* (night), *etude* (a study), *overture* (an introduction), *suite* (a series of related pieces), *allegro* (lively), *andante* (slow), *barcarolle* (boat song), *berceuse* (lullaby), *cantabile* (singing), etc.
5. Continue the study of songs, singers, and voices from the earlier grades. Learn to identify voices by their quality such as *coloratura soprano*, *lyric soprano*, *lyric tenor*, *baritone*, *basso profundo*. Know the names of some well-known singers of each type. Study an interesting song through listening, by Schubert, Mendelssohn, Grieg, MacDowell, and others.
6. Continue the study of musical instruments through hearing. Learn to recognize new instruments by sight, sound, and name. Give individual reports on interesting information about instruments. Listen to recognize instruments when used in combinations. Listen to discover which instruments are used to express the composer's idea. Use "The Calm", (William Tell Overture) by Rossini, "The Aquarium" (Carnival of the Animals) and "Dance Macabre" by Saint-Saens, "On the Trail" (Grand Canyon Suite) by Grofe, etc.

7. Make a study of musical programs on the radio as a preparation for listening.
8. Learn to distinguish between the types of dances and marches such as waltz, minuet, gavotte, fox-trot, mazurka, czardas, and marches such as military, funeral, wedding, coronation, religious, animals, dwarfs, etc.
9. Read stories and articles about composers, pieces of music, legends in music, music history and other interesting topics as aids in developing an understanding of the music.
10. Learn to hear repeated and contrasting themes in music. Recognize the two-part, three-part, rondo, and theme with variation forms.
11. Correlate the music, poems, stories of the culture groups studied in this grade.
12. Compare the folk music of several groups of people. Listen to composed music which utilizes these folk themes.
13. Study the way in which natural materials such as skin, wood, metal, and strings have been refined in the making of music.
14. Compare some of the common moods expressed in music such as serious, sad, dreaming, joyful, dull, bright, anxious, etc.
15. Study the patriotic songs of several nations. Learn to recognize and name some of the best known ones.
16. Prepare a list of the favorite musical compositions studied. Give a copy to the sixth grade teacher.

Playing Instruments

1. Explore the possible orchestral and band instruments for fifth grade children to play.
2. If possible, provide group instruction in the playing of standard instruments such as the violin, cornet, and clarinet.
3. Continue to use percussion instruments such as drums, gourds, castanets, tambourines, wood blocks, etc., to accompany songs and dances.
4. Study the well-known composers of instrumental music such as Sousa and his marches for band, Haydn and the

orchestra, Kreisler and his violin compositions, Casals and the 'cello, Paderewski and Chopin and their piano compositions, etc.

5. Listen to the radio to discover instruments and the artist who plays them.
6. Construct and tune an instrument to play in the class orchestra. This may include a flute, cigar box fiddle, drum, xylophone, or pan pipes.
7. Continue to play melodies on the simple instruments learned in the previous grades such as tonette, song-flute, marimba, psaltery, bells, water glasses, etc.
8. Work out ensemble arrangement of instruments for the playing of part music.
9. Make an instrument which plays the tones *do*, *sol*, and *fa* to be used as the bass to melodies played by the class. This may be a large three-toned marimba, chimes, or a harp with three bass strings.
10. Provide a part in the class orchestra to be played by children who are studying an instrument out of school. That is, standard instruments such as the cornet, clarinet, or violin may be played with the home-made marimbas, water glasses, etc.
11. Play two-part music, learned in the work in music reading, on instruments.
12. Study the qualities of artistic playing such as tone quality, phrasing, rhythm, etc.
13. Develop the ability to record on music paper creative melodies played on instruments.
14. Study the elementary history of the four families of instruments—brass, string, wood-wind, and percussion.
15. Listen to programs of outstanding instrumental organizations on the radio. Discuss the programs in class.

SUGGESTED OUTCOMES AND ACTIVITIES FOR GRADE SIX

Singing

1. Review for enjoyment the favorite songs learned in the preceding grades. Continue to build a repertory of new songs. Forty to sixty new songs should be learned during the year.
2. Continue to study and apply the elements of expressive singing to both group and individual work. These elements include intonation, blending of voices, phrasing, tone quality, rhythmic movement, enunciation, and pronunciation, emotional coloring of the tone appropriate to the thought expressed by the poetry sung.
3. Learn several well-known art songs of famous composers.
4. Learn to sing songs artistically for the purpose of sharing sixth grade music with others in the school and community. Prepare songs to be sung by the sixth grade chorus at school assemblies, at a local church service, P. T. A. meetings, Christmas programs, etc.
5. Study and apply the elementary mechanics of vocal usage to both the singing and speaking voice. These include posture, breath support and control, relaxed throat muscles, an open throat, etc.
6. Learn an abundance of part-song material both by rote and by reading. Use two and three-part songs and songs with descants.
7. Find interesting songs related to the centers of interest for Grade Six. Study the background of these songs for the purpose of more adequate rendition when singing.
8. Make a study of ballads. Find ballads from a variety of sources. Compare them to discover likenesses and differences. Learn a ballad of the cowboy, Kentucky mountains, England, Troubadour, etc.
9. Listen to the radio to discover which popular songs are sung most frequently. Compare these songs and discuss the merits of the poetry and music. Learn to sing

several of the best ones. Consider ways in which popular songs express the sentiments, moods, and ideals of people of the present day.

10. Make a study of music in America. Compare the music of the Colonial, Revolutionary, Civil War, and other periods. Discover who the composers were in each period, how music was used, and how the music reveals the life of the period. Compare the music with pictures, poems, stories, and other art expressions of the period.
11. Develop an extensive repertoire of patriotic music of America. Include, in addition to the customary patriotic songs, such material as "Marines Hymn", "Anchors Aweigh", "Artillery Song", songs of World War I such as "Keep the Home Fires Burning", and contemporary songs pertaining to our country.
12. At the conclusion of the year prepare a classified list of songs most enjoyed by the class. Give the seventh grade teacher a copy of this list.

Rhythm

1. Learn singing games and folk dances related to the culture groups studied in Grade Six.
2. Listen to favorite examples of music. Discover the basic characteristics of the rhythm such as recurring patterns, measure, etc. Write the notation of characteristic rhythmic patterns observed in music.
3. Listen to music in which the rhythm has a descriptive intent such as rippling water, clowns, fairies, funeral march, galloping, etc. Write the notation of the rhythmic pattern used by the composer.
4. Compare the rhythm of music with the rhythm in pictures, poems, and with natural phenomena observed in real life.
5. Review the duration patterns learned in the previous grades. Use these patterns in playing, singing, and writing original music.
6. Present the reading of four equal sounds to one beat and the common derivations of this pattern. In two-four, three-four, and four-four measures this will be four

sixteenth notes to a beat, the eighth and two sixteenths, two sixteenths and an eighth, and the dotted eighth and sixteenth note. Show, by means of tied notes, how the latter three figures are derived from the four equal divisions of the beat.

7. Review the reading of simple syncopated rhythms. Use eighth-quarter-eighth, eighth-rest-eighth note, etc., and eighth-quarter-quarter-quarter-eighth, etc.
8. Present the reading of duration patterns using the half note as the beat note in two-two, three-two, and four-two measures.
9. Be able to recognize quickly the duration patterns studied. Use flash cards and blackboard devices.
10. Be able to write all combinations of duration studied when a four-measure phrase is sung or tapped by the teacher.
11. Make a study of the rhythms found in folk music such as Negro and Indian. Employ these rhythms in original songs and dances.

Music Reading, Writing, and Theory

1. Review the pitch problems introduced in the preceding grades. Use these skills in reading an abundance of song and instrumental musical material.
2. Establish an automatic connection between syllable names and sounds for pitch combinations that are difficult for the group to read. These will probably be chromatic progressions such as *do fi sol*, *do mi sol te la*, *do te la*, etc. Use flash cards, the "ladder" drill, calling syllables, and writing from dictation to establish an automatic recognition of these patterns.
3. Establish a feeling for modulation to the dominant (*sol*) and sub-dominant (*fa*). Sing songs employing simple modulations.
4. Study new chromatic combinations which appear in the song material read by the class. Additional raised and lowered tones will be used such as *mi ri mi*, *re di re*, *mi fi si la*, etc. Proceed in the study of these combinations according to the plans previously presented for the teaching of new pitch problems.

5. Learn to sing and recognize quickly all basic triads as a preparation for more accurate part singing. Use *do mi sol, re fa la, mi sol, ti, fa la do, sol ti re, la do mi, ti re fa*. Sing triads melodically and use them for "chord-ing" by the class. Learn to recognize both the major and minor triads.
6. Analyze the intervals used in the making of a major and minor scale and a major and minor triad. Learn to sing and play them on musical instruments.
7. Read and sing music in three parts.
8. Give added experience in the appropriate use of I IV V I chords with melodies sung and played by the class. Use piano, autoharp, and descants for this purpose.
9. Use new pitch and duration skills in writing and reading original music by the group.
10. Attempt to read, at sight, new music using the words and at the same time *think* the syllables. Repeat uncertain passages by syllable as a check for sight reading.
11. Continue to recognize songs in major and minor modes by sight and sound. Be able to name both major and minor keys when the signature is given.
12. Read musical material employing the use of the new duration patterns suggested under Rhythm.
13. Extend the ability to write melodic passages from dictation. Try to write portions of popular melodies heard on the radio.
14. Review the placing of sharps and flats and the naming of keys from the location of *do* and *la*.
15. Study additional raised and lower scale tones. Learn the uses of the natural, flat, sharp, double-sharp, and double-flat when used as an accidental.

Music Listening

1. Read stories and information about the history of the four families of musical instruments—string, woodwind, brass, and percussion. Collect pictures and summarize this information for the bulletin board, scrapbook or note books.

2. Study the types of music usually played by the various families of instruments.
3. Learn to recognize all of the major band and orchestral instruments by sight, sound, and name.
4. Make a study to discover what the most famous instrumental ensembles are in America. Make a list of the famous orchestras, bands, string quartets, etc. Find interesting information about the players and conductors. Hear illustrations of their music on the phonograph and radio.
5. Study some aspects of music history of interest to the class. These interests should develop from the class activity as related to units of work and the like. Provide materials for the class to read related to those interests.
6. Review the music of composers studied in previous grades. Find new composers to study, hear their music, and discuss it in the group.
7. Develop the ability to recognize types of music and simple musical forms such as dances, marches, moods, descriptive sounds and movement, two-part song form, three-part song form, rondo, fugue, and theme with variations.
8. Find and tell interesting stories of famous pieces of music such as "March Slav" and "Nutcracker Suite" by Tschai-kowsky, "The Young Prince and the Young Princess" (Scheherezade Suite) by Rimski-Korsakoff, "Peter and the Wolf" by Prokofieff, "Omphales Spinning Wheel" by Saint-Saens, "Till Eulenspiegel" by R. Strauss, "Surprise Symphony" by Haydn, and others.
9. Learn the meaning of terms used on music programs and by radio announcers such as symphony, concerto, sonata, canzonetta, intermezzo, impromptu, bolero, largo, etc.
10. Continue the study of music which reflects the life of a people. Consider in relation to the people studied, such aspects of living as occupation, political conditions, temperament, climate, food, clothing, homes, religion, education, etc.
11. Study the background of the famous songs of America.
12. Hear recent American music. Consider how cities, industry, speed, exaggeration, uncertainty, and other American traits are reflected in our songs and dances.

Playing Instruments

1. Make marimbas, cigar-box fiddles, drums, etc. Write and play music on these instruments in combination with instruments previously learned.
2. Play the part music found in the music books in the class orchestra.
3. Study the rhythms and instruments used in folk songs and dances. Recreate this music through singing, playing, and dancing.
4. Organize a small ensemble of the standard instruments the children are learning out of school.
5. Provide for class recitals in which the children who are studying instruments individually may play for the others in the class.
6. Correlate the work done in playing with the study of instruments suggested under Music Listening.
7. If possible, introduce a new instrument to the class by writing a simple tune which may be played by any child in the class. For example, find a few places in a melody being played where the violin may play a measure on an open string. Show how to hold and bow the instrument and then allow a child to play this part in the ensemble.
8. Provide an opportunity for small groups of children to take school instruments home with them and work out ensembles independently.
9. Provide class instruction in the basic instruments which sixth grade children can play. These usually include the clarinet, violin, and cornet.
10. Use bottles, jugs, gourds, and other sound producing material for a grade instrumental ensemble.
11. Play a descant part on several instruments as the others play the melody.
12. Learn the use of primary chords in playing instruments. Use I, IV, V and chords by playing them on the auto-harp, piano, or jugs or large marimba bars tuned to *do*, *fa* and *sol* of the key in which the melody is being played. Give an opportunity to experiment with the use of these tones in playing and singing.

SUGGESTED OUTCOMES AND ACTIVITIES FOR GRADES SEVEN AND EIGHT

Singing

1. Review the favorite songs learned in the previous grades. Learn from forty to sixty new songs during each succeeding year.
2. Study the national, folk, and popular songs of the United States. Find interesting historical and social information concerning these songs. Provide material to read for this background. Arrange for reports and discussion by the class. Sing the songs.
3. Provide, if possible, an opportunity to sing in special groups such as girls' trio, boys' quartet, boys' glee club, girls' glee club, and special interest groups for the study of special types of song material, or for pleasure only.
4. The seventh and eighth grades should lead the school in the promotion of group singing by all grades through the school assembly, festival, and informal singing during the noon-hour and in the morning. Collect the favorite songs of each grade to be used for this purpose.
5. Continue to study and apply fundamental vocal technics in both singing and speaking. Develop breath support and control, a relaxed throat, and an open throat.
6. Continue to study the elements of expressive singing and apply these to songs sung. Encourage freedom of tone, phrasing, blending of voice, sensitivity to intonation, regard for the poetry, rhythmic emphasis and movement.
7. The boys and girls with outstanding talent in these grades should be given an opportunity to sing with adult choruses such as the church choir, community chorus, etc.
8. Give abundant opportunities for singing part music. Boys with changed or changing voices should be encouraged to sing at all times. Use music with a simple bass part for the changed voices. Test and reclassify the changing voices frequently.

9. Provide opportunities for individual instruction for the students with exceptional voices and musical ability.
10. Memorize selected songs which can be sung for recreation by group at parties, games, camps, and other informal meetings.
11. Study and sing the songs of our American neighbors. Hear authentic recordings and radio programs of songs from Mexico, Canada, Cuba, Hawaii, etc. Study the legends and customs relative to the music. Observe the relation between the native language and the melody.
12. Learn additional songs of other regions and peoples of our state and nation. Explain the rhythms, melodies, and poetry of these songs in terms of the circumstances of the environment out of which they grew. Use songs of the pioneers, Negro, Indian, cowboy, lumbermen, rivermen, miners, Spanish-Americans, etc.
13. Sing occupational and work songs to develop an understanding of people and their work.
14. Make a study of the chief contribution of the European and Latin-American cultures to the great song literature of the world. This will entail a study of the leading composers of each country, and the hearing and singing of their songs. Derive meaning from the songs through an understanding of the ideals of the people, the temperament of the composer, etc.
15. Compare the types of folk songs and art songs. What are the essential likenesses and differences?
16. Make a fairly thorough study of types of singers, and voices. Include the coloratura, lyric, dramatic, and mezzo sopranos; contralto, lyric, and dramatic tenor, baritone, and basso cantanti, and basso profundo.
17. Sing and listen to the different types of choral music. Compare the madrigal, anthem, plainsong, etc. Compare the oratorio, opera, cantata, operetta, etc. Become acquainted with the stories and a few main melodies of leading operas, oratorios and operettas.
18. Read about and report to the class on famous singers living today and in former times. Hear examples of their music.

Rhythm

1. Use in singing, playing, and other avenues of music reading the duration patterns studied in previous grades.
2. Study several common examples of artificial rhythm forms which appear frequently in music. The most common will be the triplet (three equal sounds to one beat) and the duplet form of the same pattern.
3. Continue to develop an automatic recognition of common rhythmic forms which appear frequently in the music sung and played by the group. Use flash cards, and other drill devices as these problems become felt in connection with the musical performance activities of the class.
4. Continue to learn and use folk dances related to the units of work in these grades. Review for pleasure the folk dances and singing games learned in the previous grades.
5. Discover characteristic rhythmic patterns for music listened to and record the notation of these patterns.
6. Be able to recognize and write from dictation all of the duration problems presented in the previous grades as well as the new patterns studied in these grades.
7. Continue to use native percussion instruments in playing the rhythms of folk songs and dances used by the class.
8. Develop the ability to recognize, from sound, the characteristic rhythms of several nations. Investigate the ways in which these rhythms have been used by composers of other nations.

Music Reading, Writing, and Theory

1. Read music, by syllable, which employs the use of all pitch and duration problems presented in the previous grades.
2. Be able to make use of the acquired knowledge of musical symbols in writing original music.
3. Develop the use of the bass clef. Know the derivation of the clef sign, its use in the grand staff, the names of all lines and spaces of the grand staff, the placing of sharps and flats and naming of keys in the bass clef, and the ability to use syllable names in reading from this clef.

4. Develop the ability to recognize by sight and sound the major, minor, tonic, dominant, and sub-dominant chords.
5. Be able to recognize and read simple modulations which occur in the music studied.
6. Further the understanding of musical symbols and terms such as staccato, legato, dolce, fortissimo, pianissimo, ritard, accelerando, etc.
7. Study interesting points related to the origin and development of systems of musical notation. Use elementary texts in music, history, music dictionaries, and encyclopedias in collecting the needed information.
8. Be able to recognize by sound such intervals as the major and the minor thirds, perfect fourth, perfect fifth, major and minor sixths.
9. Know the intervals used in major, and minor triads, and scales. Write a major and minor scale on the staff.
10. Be able to read music by singing the words at sight or by using a neutral syllable. Attempt to *think* the syllables as the words are being sung.

Music Listening

1. Review the background and hearing of favorite musical compositions used in the preceding grades.
2. Study the background and hear the music of other countries such as Mexico, Brazil, Cuba, Finland, Canada, etc. Learn about the folk music, the leading composers, and the contemporary artists of each country studied. Recognize the way in which the folk melodies and rhythms have been utilized by the country's composers in writing extended compositions.
3. Study the elementary types of both large and small instrumental forms. Compare a symphony, concerto, sonata, suite, overture, and symphonic poem. Hear at least a part of an example of each. Distinguish between a berceuse, serenade, canzonetta, czardas, rondo, theme with variations, caprice, etude, nocturne, impromptu, prelude, fugue, etc.
4. Continue the study of orchestras, bands, and small ensembles. Be able to recognize the families and instru-

ments used in each, some well-known present organizations of each type, and their conductors.

5. Study the history and development of such topics as the piano, in which recorded examples of the dulcimer, clavichord, harpsichord, and virginals are heard. See pictures of the instruments, discuss the elementary mechanics of the instruments. Do the same with the orchestra, violin, choral music, etc.
6. Listen to standard examples of music for instrumental and vocal groups. Study the story, and other materials essential to an adequate understanding of the music. Use "Children's Overture" by Quilter, "Till Eulenspiegel" by R. Strauss, "Waltzes" by J. Strauss, "Pastoral Symphony" by Beethoven, "Grand Canyon Suite", "Mississippi Suite", "Three Shades of Blue" by Grofe, "Overture 1812" by Tschaikowsky, "Kamennoi-Ostrow" by Rubenstein, "Pacific 231" by Honegger, "Unfinished Symphony" by Schubert, etc.
7. Learn to recognize some basic styles in music such as the classic, romantic, polyphonic, etc. Study the elementary characteristics of each period. Compare the music with the architecture, dress, poetry, dance, and other expressions of the period.
8. Become better acquainted with the major composers of music by listening to their music and reading and reporting about their lives.
9. Hear composed music related to special days, occasions, and historic events. For example, in addition to singing the Christmas and Easter music, hear musical illustrations which will broaden the scope of the child's understanding of this heritage.
10. Continue to develop listening around topics which are elementary yet interesting such as animals in music, humor in music, nature in music, love of country in music, music and war, etc.
11. Review the music heard on the radio, and in the movies which is of immediate interest such as the music to "Fantasia", the authentic music of Schubert from which the melodies of "Blossom Time" were taken, the entire music from which excerpts are taken as themes for radio

broadcasts such as "Valse Triste", "Finale" (William Tell), "Rhapsody in Blue", "On the Trail", etc.

12. Study the American light opera composers, stories and music. Use examples from Herbert, Romberg, Friml, and Gershwin.

Playing Instruments

1. Provide ample opportunities for individual interests in playing musical instruments. The school should provide class instruction in basic instruments, such as piano, violin, cornet, and clarinet. Coach children in playing solos and ensemble music artistically. If possible, this instruction should be free to the student.
2. Provide opportunities for the children to play for the enjoyment of other people in the school and community.
3. Relate the study of instrumental music to the regular music work done in music reading, theory, listening, rhythm, and singing rather than allowing it to develop as a special interest totally unrelated to the music program as a whole.
4. Continue to give the less talented students an opportunity to play simple instruments in groups. Use ocarinas, psalteries, bells, tonettes, marimbas, etc. Apply the study of music reading, theory, singing, and music appreciation to these instruments.
5. Arrange or select music which may be played on instruments by the entire music class. Combine the simple instruments with the standard instruments, by adapting the playing to the students' interests and abilities.
6. Give an opportunity for tuning a "home-made" instrument to scale. Make a marimba, flute, or tune bottles, jugs, or water glasses for use in the class orchestra.
7. Hear examples of many kinds of instruments, study their history and development. Listen to well-known orchestras, bands, and individual artists and their playing.
8. Develop an appreciation of tone, blending of parts, counterpoint, phrasing, and intonation through playing.
9. Become acquainted with a few outstanding musical compositions for several of the instruments and instrumental organization. Use illustrations such as a Bach

Prelude and Fugue for the organ, a Brahms's waltz or Hungarian rhapsody for piano, a song by Schubert for the human voice, a melody by Kriesler for violin, a movement from the "Pastoral Symphony" by Beethoven for the orchestra, and a march by Sousa for the band.

10. Study the native instruments of several countries such as the recorder, balalaika, accordion, guitar, African drums, dulcimer, marimba, celesta, etc. Hear recorded examples of each.

EVALUATING THE PUPIL'S WORK

In evaluating the child's growth and development in music the teacher should:

1. Determine whether or not the child's range of interests in music is constantly broadening. Is he discovering new meanings in music which impel an active participation in listening to, and performing music which is new to him?
2. Determine whether or not the child participates in music willingly and with enjoyment or does he require continuous urging? Does he frequently choose to engage in the musical activities of the school in preference to other activities? Does he ask for musical materials to be used at home or during free periods at school?
3. Determine whether or not the child is making normal growth in the essential musical skills. Is he growing in his ability to read the musical score? Is he becoming increasingly proficient in the muscular coordinations needed in performing music?
4. Determine whether or not the child is becoming increasingly independent in the use of his musical abilities. Can he sing accurately when singing alone or with small groups or does he depend upon others to help him?
5. Determine whether or not the child is developing the insights essential to a rich interpretation of music heard and performed. Is he able to identify music with experiences familiar to him? Is he emotionally sensitive to music as a language of expression?
6. Determine whether or not the child is growing in his ability to make the needed discriminations in listening to,

and performing music. Can he discriminate between the various moods expressed in music? Can he discriminate between types of movement expressed in rhythm? Can he discriminate between the qualities of tone used in the production of music?

In general, the teacher will need to evaluate the child in music in terms of the specific objectives stated for each grade. The technics used for this evaluation will include both the teacher's observation of the child's behavior, and occasional objective tests when these are appropriate for measuring the abilities developed.

SUGGESTED ADAPTATIONS OF THIS PROGRAM FOR SCHOOLS HAVING SEVERAL GRADES TAUGHT BY ONE TEACHER

The section of the music course of study entitled "Special Helps in Teaching Music" deals with the following topics: The Song Program, The Rhythm Program, Music Listening Program, Making and Playing Musical Instruments, and Music Reading. Each of these are intended to be as helpful to the teacher in the ungraded, as in the graded school. The teacher who instructs combined grades will need to select from the suggestions given, those activities, or combination of activities, which are adaptable to the levels of abilities and background of the individuals within the particular group. The songs to be used, music to be heard, and rhythmic activities engaged in may frequently be of general interest to all age levels. In addition, the teacher can find ways of unifying the work of a group by adjusting the parts of each activity to meet the needs of the various individuals in the group. For example, in a rhythmic activity the small children can express regularity of beat, others may express measure rhythms, others phrase rhythms, and an advanced group may play musical instruments with the melodies used. In this way each child will work profitably on the phases of each activity of interest to him.

SPECIAL HELPS IN TEACHING MUSIC

The Song Program

The singing of songs which are appropriately adapted to the maturity and interests of a given group of children should constitute an important part of the music program. The vocal mechanism is the natural musical instrument. It is intimately connected with the nervous system, thus making it a basic part of expressive daily living. Such effective moods as joy, sorrow, or admiration are perhaps communicated more readily through the qualities of vocal sound than through any other expressive medium.

Although a few fundamental mechanics are essential to effective vocal usage, the teacher should be constantly alert lest the children become confused over the means and ends in singing. Good diction, proper pronunciation, desirable posture, proper breathing, and the like often need attention, but they need attention in order to give the song added expressiveness. It should be remembered that if singing is to be a vital experience for boys and girls they must intellectually understand and sympathetically feel that in a song the voice sings a thought or an idea rather than merely a beautiful sound. An expressive song represents a wedding of words and music. Expressive singing is this wedding brought to life and made a reality.

The Selection of Songs

One of the first tasks which confronts the teacher in building an effective song program is the selection of worthwhile song materials with which to work. Whether or not the children sing with interest, enthusiasm, and understanding often depends more upon the choice of the song to be used than upon any other factor. Unfortunately, not all song materials appearing in books for children have been tested, tried and found successful. Some are presented for the purpose of teaching a musical skill; some were written by well-meaning adults *about* children, but not *for* them; and some are folk melodies from foreign countries with English words added which have little or no relation to the original tune. Out of the increasing abundance of song literature, the teacher must choose wisely if the success of the singing program is to be assured.



Singing together helps provide a common background of experiences

Although there is seemingly no set of criteria which are infallible in predicting the success of a song, there are a few general attributes which can be somewhat explicitly stated and discussed in this connection. It should be remembered, however, that in the final analysis the evidence of interest and sympathetic insight which the child expresses for the song is the ultimate test of its worth and utility. It may be that a song possesses all of the known qualifications of a well-written song for children and yet be sterile in its appeal.

The Text or Poetry of the Song

In evaluating the potential worth of a song for children, the teacher should read the lines and consider it first as poetry. Is it expressive and sincere? Does it lend new meaning and enhancement to a familiar thought, idea, or experience? Does it deal with a subject which is of interest to the group of children with whom it is to be used? Are there too many new and difficult words in the song? Does its subject deal with experiences which are of *immediate* interest to the children such as its appropriateness to the season, special days, or interests relating to units of work in other subjects? There are a great variety of literary topics which appeal to children, but songs expressive of humor, sentiment, and adventure are invariably given a high rating by children.

The Melody or Tune of the Song

The melody should be so constructed that it sings naturally and easily, and with rhythmic power and vitality. The figures and phrases within the tune should be agreeably related rather than disconnected. There should often be ample repetition of melodic passages, especially when there are repeated words or phrases in the melody. It should be somewhat limited in range, probably not exceeding the limits of the lines and spaces of the treble staff. Some songs should have an abundance of descending progression since, for children, descending progressions are less difficult, vocally, than ascending ones. It should avoid difficult progressions. It should have a well-defined key relationship or tonality, making frequent use of simple scale and chord-line passages, and ending on the "home-tone".

The Relation of Words and Music

In a well-written song there is always an agreeable relationship between words and music. This may be observed in several ways:

1. Read the poetry slowly and aloud. Notice the natural contour of the voice in speaking the lines. Some word-endings naturally ascend while others descend. After applying this test to the lines sing the melody with the words. Do the various skips in the melody ascend and descend according to the words as they do in speech? Apply this test to a song which has lived, such as "Swanee River" and note the splendid relationship between the spoken word and the melodic inflection.
2. Does the general character of the music convey the thought of the text? It takes a happy tune to carry a happy thought, and a sad tune to carry a solemn thought. Note the appropriate plaintiveness of such a melody as "Massa's in the Cold, Cold Ground".
3. Frequently there is a touch of realism in a melody which is usually indicative of thoughtful composition. For example, if the idea or thought expresses an upward movement such as swinging high and then low, does the melody move first high and then low appropriate to the words? Children often experience difficulty in learning, as well as a dislike for melodies which move contrarily to the thought.
4. The natural emphasis on word syllables should be properly matched with the accented and unaccented beats in the music. Important words and the important parts of words fall on the accented or "bar-beats" in the music. Also, the length or duration of sounds are determined by the relative importance of the thought expressed. Note that in such beloved songs as *All Through the Night* the first phrase "sleep my child and peace attend thee", the important words *sleep* and *peace* are sustained longest while the unimportant words *my* and *and* receive the shortest duration.

Although such points pertaining to song merit as those discussed above are somewhat technical, it is important that

the teacher gradually accumulates a fund of such insights upon which to base a critical judgment of materials. It will be said, no doubt, that the appreciator is seldom aware of these qualities as he sings the song. Perhaps the assertion is true, but it is likewise true that frequently his likes and dislikes are indirectly the result of tangible and objective matters such as those discussed above.

Mechanics in Singing

The teacher is constantly confronted in the classroom with problems in assisting children to sing accurately and expressively. It is the purpose here to discuss only the major problems in this connection.

The Child Voice: Its Use and Development

The teacher should be able to distinguish between correct and incorrect qualities of the child voice. It is generally agreed that the natural singing quality of the unchanged voice is high, pure, flutelike, and produced with evident ease. The incorrect voice is characterized by its huskiness or "throaty" quality and often is produced by projecting the chin and tensing the muscles of the throat and lower jaw. These contrasting correct and incorrect qualities are sometimes called the "head" and the "chest" voice, respectively. The child who uses his singing voice properly can usually sing as high as G (first space above the treble staff) with ease. This quality can then be carried downward to D below the treble staff. This, of course, means the compass of unchanged voices as a whole. There are many children who can sing with an agreeable quality as low as A below the staff, and others who sing freely as high as the C above the staff.

Although the correct use of the singing voice is not difficult to attain, the teacher should be aware of the major causes of faulty singing and have at hand a fund of teaching aids for bringing about the desired results. Some suggestions related to singing problems include:

1. If boisterous or harsh singing is evident, give particular attention to the song material being used. Do the ideas embodied in the text suggest shouting or boisterous singing? Until the singing quality of the group has im-

proved, make use of many songs which suggest beautiful, yet appropriate voice quality. Constantly encourage the children to *think* as they sing by asking, "What kind of song is this? Should it be sung with heavy or light voices?"

2. Watch the posture of the children. If seated while singing, it is best to sit away from the backs of seats or chairs. The head and chest erect and both feet on the floor.
3. Although breath is of prime importance in singing, it is doubtful that direct instruction in breathing should be used with small children. Proper breathing will usually result when sustained melodies are used, and when the subject of the song encourages smoothness of voice quality.
4. Songs with an abundance of melodic progressions which begin high and descend usually result in better tone quality than ascending progressions.
5. Singing immediately following vigorous physical exercise often results in the forcing of voices. If the class has a regularly scheduled singing period, it is best that it follow a period of quiet work rather than a period of outdoor exercise. Also, when action songs and folk dances are used, it is desirable that a part of the class sing while the others do the action to the music.
6. The voice pattern which the children imitate should be suggestive of the light, flutelike voices of the children. The teacher with a naturally heavy voice quality should sing as lightly, yet as expressively, as possible. Those children who sing correctly may often be used as patterns for the other children to follow. If phonograph recordings of the songs used are available, voice quality is often improved by using the recorded pattern in learning the song.
7. Advise the children to sing *lightly* rather than *softly*. Soft singing sometimes results in a hushed, breathy tone.
8. Young children often discover their singing voices by appealing to their imagination. Try using such expressions as "Sing out of the top of your head." "Sing up on tip-toe." "Sing like a bird." "Sing like a fairy." "Buzz like a big bee—now like a little bee."

Individual Differences in Singing

Children differ in their ability to participate in music in much the same way that they differ in the ability to learn other school subjects. It is no longer believed that participation in music depends exclusively upon special aptitudes possessed by only a few individuals. Every child can engage in some form of music. It is the responsibility of the teacher to guide the child into the forms of musical expression which are best adapted to him. Although there are many individual peculiarities which the teacher will discover in working with children, there are several common reasons for the differences children exhibit, especially in their ability to sing. Some of these will be mentioned and discussed briefly.

Maturation

Just as there is an age at which a child walks, talks, climbs, or begins to express himself in other ways, so there is an age at which a child begins to sing or to move rhythmically to music. In the early grades especially, the teacher often discovers children who seemingly have no perception of what singing means. Often, these same children may suddenly "discover" in later years that they can sing. Although little is known about biological "ripening" in music, it is probably safe to guess that such maturation is a factor in the child's musical development.

Hearing

Individuals differ in the ability to hear musical sounds. For example, some children are endowed with the capacity to hear small differences in pitch whereas others hear only wide differences. Fairly reliable equipment is available for testing the hearing traits in music. This equipment should constitute a part of every school's testing program.

It should be noted, in this connection, that hearing is only one of the many factors which has to do with musicality. It has been customary for many teachers in the past to attribute faulty hearing to all sorts of individual difficulties in music. Judgment concerning hearing ability should not be made without the aid of careful testing technics.

Musical Background and Experience

Children must learn through broad experiences with music how the tones in our musical system are related. Often the young child who is considered to be especially talented is one who has had ample opportunity to hear music played and sung in the home. Children who have not had the privilege of this experience at home should have it in the school. There is no substitute, in the early musical education of the child, for ample contact with music in a variety of its forms.

Muscular Coordination

Often the child has the proper mental perception of what he is expected to sing but has difficulty in reproducing it vocally. Frequently this difficulty is due to inexperience—a matter of the physical education of the vocal mechanism. The resolution of this difficulty is evident. The child needs daily opportunities to exercise his voice in song. With experience and sympathetic encouragement, he will learn to coordinate his vocal muscles in much the same manner that through experience he learns to refine his movements in walking, talking, and the like.

Attention

Sometimes, in the learning of tasks which involve a high degree of mental application, the child experiences difficulty in concentrating on the task at hand. The teacher, in this case, should bend every effort to capture the child's interest and to place him in a physical position in the classroom where a minimum of distracting influences occur.

How to Provide Developmental Learning Experiences for Children with Differing Abilities and Differing Aptitudes in Singing.

As is suggested in the foregoing heading there are a multiplicity of differences in singing abilities and aptitudes to be found within the average group of children. There are those children who are commonly called "monotones" or "non-singers"—those who cannot repeat tones of a given pitch which the teacher sings; the "near-singers", those who can often succeed in part, but who have not developed all of the necessary skills in singing successfully with others; and the "singers" or the children who give evidence of superior aptitudes and abilities.

The Non-Singer

Frequently, a large proportion of a group of children of early school age have difficulty in "carrying a tune". The reasons are, no doubt, obvious. Many children have had little or no opportunity to hear music in the home, and, hence, have not learned what "to sing" means. Others perhaps have heard singing in the home, but have not made the necessary motor adjustments necessary in reproducing a melody correctly. Still another part of the group may not have "ripened" or matured to the place where singing is possible. A small minority may be sufficiently defective in hearing, that musical expression which demands the reproducing of sound of a definite pitch becomes an impossibility. The teacher should note, however, that the musically defective child is the exception rather than the rule; and by all means, not to pass judgment on the child's aptitude without the evidence of carefully applied tests. The following are special helps for non-singers:

1. Ask the child to imitate sounds familiar to him which represent a wide difference in pitch. This will insure a perception of pitch differences. "Buzz like a big bee—now like a little bee." "Toot like a big whistle—now like a little whistle." At the outset, the teacher or a child "singer" may need to establish the pattern which the non-singer is to imitate.
2. Make ample use of the descending minor third interval (*do-la* or *sol-mi*, or E flat to C). This interval is apparent in calls with which the child is familiar. It may be used in a variety of ways. Call the child's name using this interval—the child answers "I'm here", attempting to match the pitch with which the call is given by the teacher. Other calls may be used in a like manner such as "morning papers", venders' calls such as "apples", "oranges", etc.
3. Excerpts from songs which the class is learning should also be frequently used since the reproduction of an entire phrase of the song is often too difficult. Such figures as "Whip-Poor-Will", "Cherries Are Ripe", etc. are helpful for assisting the slow singers.

4. Use calls which begin with a hum and develop into a vowel. The well-known imitation of the "moo-cow" or the "mew" of the kitten are illustrative.
5. When the child, in repeating a call or a short phrase sung by the teacher, persistently sings an incorrect pitch, the teacher may find it helpful to occasionally show the child correctness in tone-matching by imitating the pitch which the child has reproduced. That is, if the child sings "I'm here" at a pitch lower than that given by the teacher, the teacher may immediately sing the child's name again, using the interval which the child has sung.
6. Make frequent use of a "pupil-teacher" in assisting the non-singer. These children often imitate another child more readily than they do an adult. In using this plan the teacher may ask the two children to stand facing one another. The teacher then sings the figure to be used to the pupil-teacher who in turn sings it for the child who is being assisted.
7. Since the child who cannot match tones frequently annoys the other children who sing correctly, it is often a wise plan to seat the non-singers near the front of the room during the organized singing period. Care should be exercised that such an arrangement does not cast disfavor or the disapproval of the group upon these children. It should be handled by the teacher in the same matter-of-fact way that individual help is pursued in the other school subjects.
8. Early in the musical development of the child, he should make music on simple melodic instruments such as tuned water-glasses, a home made marimba, and tones or short melodies played on the piano. When these instruments are used, singing should often accompany the playing. Occasionally, a child who cannot imitate a vocal tone will "catch on" to the matching of an instrumental tone.

It is widely urged by music teachers that the non-singer should not be permitted to sing with the others of their group. The classroom practice of these teachers is usually to classify

the children into groups of "singers" and "listeners". The listeners are given individual help regularly with the encouragement that they will soon sing well enough to be seated with the singing choir. It should be said, regarding this plan, that in the hands of an expert teacher inhibitions regarding singing may not often develop. For the less expert teacher, however, the children may develop feelings of inferiority which may prove to be long lasting. Since the majority of singing defects in children are probably caused by slowness in maturation or inability in muscular coordination, there seems to be justification for urging that *all* of the children sing *all* of the time during the singing period. To be sure, group participation will not substitute for continuous individual help, but it will frequently assure a more desirable attitude toward singing as an activity.

The Near-Singer

Some children can match individual tones, or very short melodic figures, when singing individually but lapse into a "monotone" when singing a song with the class. These children may have (1) basically inferior musical memory, or (2) they may be in need of additional experience in relating an extended sequence of tones in a melody, or (3) attention to their own singing may be distracted by listening to others in the group. These children should:

1. Be granted frequent opportunities to sing individually.
2. Sing frequently with small groups of children such as in "duets", "trios", "quartets", etc.
3. Be placed in a position in the group where distraction is reduced to a minimum.

The Singers

The children with superior musical ability are often neglected to a greater extent than the children with inferior ability. This often results in an increasing lack of interest and enthusiasm. In a heterogeneous grouping of children, the problem is difficult, but in a well-planned program enriched experiences in singing may be provided. These children may:

1. Be organized into a class "choir" and be granted occasional opportunities in singing by themselves.

2. Be selected to participate in a special elementary school choir in which the best singers of several grades are grouped together. Each large elementary school should organize both a *primary* and *intermediate* choir for children in the respective age groups.
3. Small vocal groups may also be organized such as quartets, octets, etc.

Teaching Songs by Rote

Rote learning is done by imitation. Rote songs are songs which are learned by imitating a song we have heard another person sing. Just as in our spoken language, we learn to speak by hearing others speak, much of our early experience with music must be established by hearing others sing, and in this manner learning to participate in it. In fact, the teachers of reading and language now agree that the later success in the use of written symbols hinges upon the previous understanding of the verbal language. In music, likewise, the foundation for properly interpreting printed musical signs depends to a large extent upon the previous experience one had in singing and playing melodies which have been learned by rote. Thus, it can be readily seen, that this type of song-singing is not only an enjoyable experience, but also an essential aspect of continuous musical development.

How to Teach a Unison Song by Rote— Part-Whole Method

1. After a song has been selected which the teacher believes will capture the interest of the children and is sufficiently short and simple for the class, the teacher should, first, learn to sing the song correctly, with agreeable tone quality, and expressively with regard to its thought content.
2. Thought should be given to the introduction of the song to the children. Unless interest in the song is stimulated at the outset the learning will be wasteful. There are many ways to interest the children in a song. A few devices to use, and points to bear in mind in this connection are:
 - a. Is the song expressive of an immediate interest of the children?

- b. Give a brief verbal introduction to the song to acquaint the children with the background, or the circumstances of the environment out of which the song grew. This may be in the form of a narrative or of class discussion.
 - c. Occasionally an interesting poem or picture which relates to the subject of the song will be helpful in establishing the emotional atmosphere preparatory to learning the song.
 - d. Whenever possible conclude the descriptive introduction with a question of which the answer is to be found in the song. Instruct the children to listen for the answer as the teacher sings the song. This will insure concentrated listening to both melody and words.
 - e. It is permissible to use the piano accompaniment during the introduction of the song. After the introduction, if interest can be sustained, the accompaniment should not be used until the song has been learned.
 - f. It is especially important that the initial presentation of the song be artistic, sincere, and expressive. A song is an expression of a thought or an idea. It is not merely a melody. This being true, the teacher should attempt to convey the meanings embodied in the song through the appropriate use of vocal sounds, facial expressions, and the like.
3. If there are repeated phrases or short melodic figures in the song these may be taught first. Proceed by singing this figure for the children and ask them to repeat it. When the children can sing this simple phrase correctly, return to the beginning of the song and sing it for the class once again, asking them, this time, to sing the part they have learned each time you come to it. This will provide repeated hearings of the more difficult parts.
4. Now sing the first phrase of the song and ask the children to repeat it. Then sing the second phrase and ask the class to repeat this phrase. Now sing phrases one and two, the class should now be able to repeat both phrases

in combination. Proceed in a like manner with phrases three and four and so on until the song has been thoroughly learned.

5. Although the phrase-wise teaching of a song is simple, there are many points which must be observed in insuring economical and effective learning. Some of the points to observe are:
 - a. Sing the song at a pitch suitable to the range of the children's voices. Most of the songs included in the basic school music books are properly pitched. The use of a pitch-pipe in starting the song will insure a satisfactory range.
 - b. Test the pitch frequently during the learning of the song. This will tend to make the children pitch conscious and avoid flatting.
 - c. When a phrase has been sung which the class is to repeat, give the starting pitch of the phrase by saying "sing" on the pitch at which the children are to begin. This simple device also serves as a cue to start singing together. For variety instead of the word "sing" use "front row", "Mary", etc. These variations are valuable in that no time do the children realize ahead of time which child or which section of the class will be called upon to repeat the tune the teacher has sung for them.
 - d. Make liberal use of the hand in showing the up and down direction of the melody as the children sing. This also helps in keeping the class together.
 - e. Avoid too much talking during the song learning period. This should be observed by the teacher and children alike. Children frequently interrupt with a comment when the class is attempting to learn a song. If this condition prevails ask the children to agree not to talk or to ask questions for two or three minutes by the clock. Provide ample time to discuss the song before and after the brief work period but not during it. In this manner, the class will soon realize the value of concerted and uninterrupted effort.

- f. Don't work too long on one song. Have several songs in the process of being learned at one time.
- g. When children have much difficulty in repeating the section of the song, the teacher has sung for them, it is likely that the section is too long. For small, beginning children, it is sometimes necessary to break the phrase into two, three, or four note units. However, it is best to always try the entire phrase as the unit before it is broken into smaller parts.
- h. Work for independence in singing. When children are permitted to constantly sing *with* the teacher or *with* an accompanying instrument, they finally learn to depend upon these aids. When this happens the children rarely sing at home or at play because they lack the assistance they have learned to depend upon. Sing *for* the children but not *with* them, especially during the learning of the song. After the song has been learned the teacher and class may then sing it together.

How to Teach a Unison Song With the Phonograph

Many of the songs which appear in the basic music books for children have been recorded for use on the phonograph. These recordings are especially helpful to the teacher who has difficulty in singing correctly and agreeably. They are used widely for rural choir work and can also be effectively used by the special music teachers as a means for adding variety to the regular singing program. When groups of children from separate schools or grades are brought together for choir singing and where a minimum of rehearsal time is available, the use of the record, in which all of the children learn the song from the same pattern insures the success of the program. In teaching a song with the phonograph, the following steps may be helpful:

1. In introducing the song with the phonograph follow the points listed under the same topic above. Regardless of the plan used for awakening an interest in the song, the children should have an opportunity to hear the song several times in its entirety before beginning the singing of it.

2. After the song has been listened to and discussed, its meaning made clear, and all words understood, the children may listen again and move their lips with the song as it is sung by the phonograph.
3. Now permit the children to sing the "easy parts" of the song with the phonograph. The easy parts are usually repeated figures or phrases. For example, in the song "Dairy Maids", the easy parts are the words "tinkling, tinkling", and "Mary, Molly, and I".
4. After the "easy parts" have been sung, allow the class to sing the more difficult parts with the phonograph and listen to the easy phrases.
5. Divide the class into two groups. Play the record again, one group singing the difficult parts and the other group the easy parts.
6. Exchange parts. Those who have sung the difficult now sing the easy, those who have sung the easy, sing the difficult.
7. The class is now ready to sing the entire song with the phonograph.
8. After singing the song several times with the phonograph, it should then be sung *without* the aid of the record. Play the introduction to the song on the phonograph and as soon as the voice part begins remove the needle from the record and allow the class to sing to the end of the song without help. Keep the tempo correct at all times. Test the pitch at the end of the song by replacing the needle to the record as near the end as possible.
9. From time to time the children will enjoy singing the familiar song individually or in small groups. This should be encouraged since it develops independence and self-assurance in singing before others.

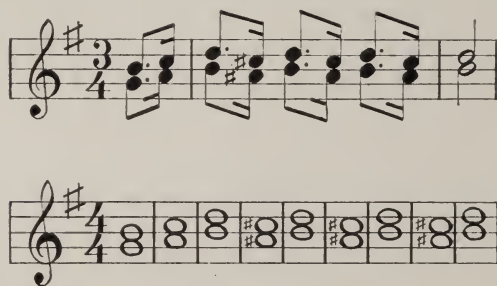
The teacher should at no time plan to complete all the steps outlined above during one singing period. Several songs should be in the process of being learned at one time. A song may be introduced and discussed during the singing period, another song, which has been partially learned, may be continued, and several familiar songs may be reviewed.

How to Teach a Part-Song by Rote

In a well-organized music program part singing need not be introduced until the children can read simple music accurately. When reading skills are well developed part singing presents few learning problems. However, in most schools there will be a need for some rote work in part music for upper grade children, since only under ideal circumstances will the children be capable of reading the part music which is of interest to them. Chorus programs, the elementary school choir, and other special musical interests will demand rote procedures in teaching. In attempting to teach part songs by rote:

1. The children should have abundant background in singing unison songs. They must be able to repeat quickly and accurately a single melodic line by imitation.
2. In introducing the part song to be learned, if possible provide an opportunity for the children to hear the song several times. If necessary, ask another teacher to assist by singing the song with you as a duet.
3. Use an *unfamiliar* song for the initial work in part singing. If the melody is familiar to the children, they are inclined to sing the melody *an octave lower* instead of the second part, as written.
4. If interest in the song can be sustained, teach the lower part to the entire class before the melodic part is introduced. If interest cannot be sustained teach only a phrase or two of the lower part to the entire group.
5. Teach the melody of a phrase in two to a small group. They will learn the melody rapidly. Ask this group to sing the melody as the others sing the second part.
6. When the class can combine the two parts in this way, allow a few more singers to help on the melodic part. The second part should always be sung by a larger group than the melodic part. Assign the best singers in the class to the second part.
7. Avoid designating the two parts as "soprano" and "alto". Instead, call them "first" and "second" melody, or "upper" and "lower" voices.

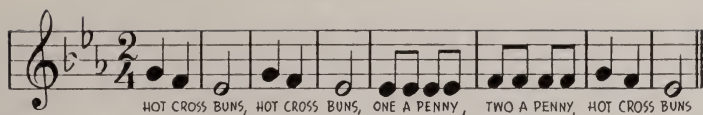
8. If piano accompaniment is used, place the children who sing the "second" melody nearest the piano. Arrange the class into *groups* rather than *rows* for part singing. As a rule, place those who sing the "second" melody to the right of the teacher and those who sing the "first" melody to the left.
9. Make ample use of part songs in which the harmony is simple and sustained. A good blending of voices is difficult to attain when the two parts move too rapidly. The children should be encouraged to *listen* to the blending of voices at all times. If parts move too rapidly for clear perception of the harmony, write the chords of the song on the blackboard and work briefly on blending of parts. For example, the "Minuet in G" as a part song is made up largely of *thirds* and *sixths*:



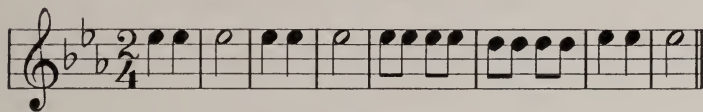
10. Songs with descants are now being widely used in elementary schools. These are songs in which a second melody is used to embellish a main melody. Children enjoy singing them since the "descant" is as interesting melodically as the main melody. Material of this type is now available in the form of octavo music or entire booklets of descant material. Some of the newer basic music series for schools are including descants to be sung with the songs included in the books.

The teacher may begin the singing of simple descants "by ear". That is, improving a simple descant part to be sung by rote with familiar songs. To illustrate, a simple melody such as "Hot Cross Buns" may be sung as a descant as follows:

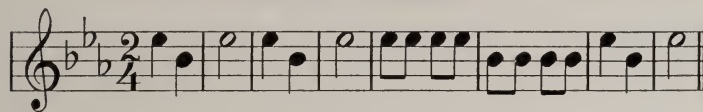
Melody



First Descant



Second Descant

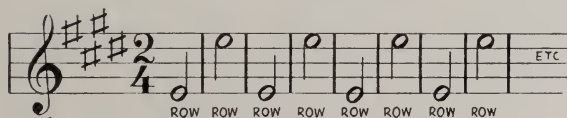


The familiar round, Row, Row, Row Your Boat may be sung with simple descants as follows:

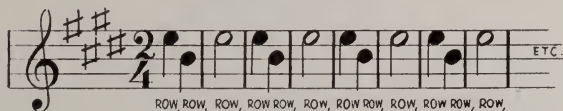
First Descant



Second Descant



Third Descant



After several simple descants have been taught, the class will be able to "compose" its own descants to familiar songs. Nearly all simple melodies can be harmonized with the tones, *do*, *sol*, and *fa*. Allow the children to experiment with these tones in relation to such melodies as "Jingle Bells", "Silent Night" and other simple songs with which they are familiar. If simple instruments such as tonettes, bells, psalteries or tuned water glasses are available, these may be used in playing the descant parts.

The Rural Choir

The choir plan for teaching music in the small schools of Colorado has been in effect for some time. It is the belief that this plan will encourage singing in the small schools where the limited musical background of the teacher is prohibitive of a complete music program. Also, the teacher who does offer a variety of musical experiences for children often participates in the plan as an added agency for enriching the regular music program of the school. The teaching plan also makes it possible to combine the choir members of several schools into a massed organization with a minimum time for rehearsal. According to this plan, not only do the children in the participating schools learn the same songs, but these songs are all learned from the same recorded pattern which makes for unity in singing without the combined rehearsal. The schools which desire to participate in the choir plan should know the following things:

1. At the beginning of the fall term the choir songs for the year are announced. These songs appear on printed lists available at the office of the Public Relations Department, Colorado State College of Education, Greeley, Colorado. As a rule, the choir lists are mailed to the County Superintendents in the fall and are thus also available at these offices. It is recommended that the schools within a given district, county, or area who wish to participate in this plan and who later desire to meet together for a festival should agree upon the plan early in the school year in order that the details of the meeting may be carefully planned in advance.
2. Blanks are also available with the song list upon which to record the work of each child in the school who is working toward choir membership. This blank provides a space for the child's name, and the titles of the choir songs for the year. When a child has learned one of the songs and can demonstrate his ability to sing the song, accurately from memory, he receives a check mark for this song. As soon as the ten songs for the year have been checked in this manner, the child automatically becomes a member of the State Choir and is qualified to participate in any state, county or district choir events. He will also receive, at the end of

the year, a certificate which acknowledges his choir membership for the year. Teachers are requested to mail the lists of their choir memberships to the offices mentioned above for certification of the choir members.

3. The songs appearing on all choir lists are recorded and should be taught with the phonograph. This is especially important if children from several schools plan to sing together in a massed choir. In fact, the pupils who do not learn the song from the recorded pattern should be excluded from participation in combined choir programs. A plan for teaching songs with the phonograph is described on page 559.
4. It is further suggested that the schools within a given area build their own lists of choir songs for the year if the state list does not meet the needs and interests of the cooperating schools.
5. The material necessary for participating in the choir are: (1) a satisfactory phonograph, (2) the records upon which the songs appear, and (3) a reference copy of the song book or books from which the songs have been selected. A portable phonograph is adequate for this work. It should be kept in good working order. The speed of the turntable should be checked frequently. The record should revolve 78 r.p.m. in order to insure the proper pitch for singing.

The Rhythm Program

Rhythm, in music, does not mean the mere performance of duration patterns as they appear in the printed musical score, nor does it mean exclusively "keeping time" to music as it is sung or played. Instead, the term "rhythm" should be broadly conceived to include all of the phases of movement in music. Only through a broad, comprehensive conception of rhythm can a rhythmic program be developed which will utilize bodily movement as an agency through which many aspects of music can be experienced by the child. A developmental program in rhythm will, then, attempt to contribute its part in helping the child experience the variety of things in music to be learned at each level of his musical growth.

Principles of Rhythmic Experience

There are a few established principles concerning rhythmic experience which the teacher should understand as a basis for constructing an adequate learning program in rhythm. These principles include such points as the following:

1. Although an abundance of psychological experimentation has been done in connection with rhythmic responses the authorities are still in disagreement regarding whether or not our experience of rhythm is always motor or whether it can be mentally perceived with no apparent muscular activity. As teachers, however, we are probably safe in assuming that even though rhythm may be perceived mentally it can best be taught through some form of bodily activity. In fact, the older theory which taught that the learner progresses from the use of complete activity, in which the use of the large muscles are predominant, to gradually more incomplete muscular activity has not yet been disproved.
2. The appropriate adaptation of muscular responses to the rhythm of music is an attribute worthy of the teacher's attention. The muscles of the human body are so constructed that one set of muscles may be more appropriately adapted and move more naturally to a given rhythm than another set of muscles. For example, we more naturally respond to comparatively slow rhythms with the long muscles of the legs, arms, or torso than with the shorter muscles of the fingers or tongue. In brief, the more rapid the rhythm the shorter should be the muscles used in response to it, the slower the rhythm the longer should be the muscles used. Also, since within any given musical composition there are a multitude of rhythms varying from rapid, medium, to slow, the well-rounded rhythm program for children will encourage all kinds of bodily responses which bring into use a great variety of muscle combinations.
3. Since small children have shorter muscles than adults, it is obvious that their movements such as walking, running, clapping, and the like should be, by comparison, more rapid. It is for this reason feasible, in the beginning, to use musical illustrations which are com-

paratively faster in tempo than those suitable for adults. The natural tempo of the small child can be readily observed by the teacher in watching children as they move about the schoolroom or on the playground.

4. The rhythmic activities of daily life in which the child exhibits and controls regularity of motion are such things as walking, running, skipping, hopping, swinging, pounding, etc. It is wise to use these familiar activities in movement to music. In this case the activity will be familiar—only its connection with music will be new. Then, too, these familiar movements employ the use of large, easily controlled muscles through which rhythms can be readily and vividly felt.
5. Not only should rhythm be felt, kinesthetically, but should be *seen* and *heard* as well. In activities such as clapping one sees, feels, and hears the rhythm simultaneously. In swaying, one *feels*, and probably *sees*, but does not *hear* it.
6. There is some psychological evidence which seems to indicate that the child's first interest in movement associated with music is not stimulated so much by the rhythmic quality of the music as it is by sound or tone. The ability to perceive rhythm seemingly matures later in the process of the child's biological growth and development than his response to sound. It is for this reason that the teacher of small children should not be too much concerned when a child's early motor responses are diffused rather than *rhythmic* in the refined sense.

The Teaching of Rhythm

Free, Interpretative Movement

In the beginning encourage free, relaxed, and spontaneous movement to the music. Activities should be selected which employ the use of the whole body such as skipping, running, walking, swaying, and the like. These activities may be teacher-directed or may be suggested creatively by the children.

Teaching Suggestions:

1. "How did you come to school this morning? Did you walk, run, skip, or skate? Here is some music which is like

one of these ways. Which one do you think it is about? Listen and then we'll choose someone to show us." Play: "March" by A. Hollaender, "Run, Run, Run" by Concone, "Motive for Skipping" by Anderson, "Skating" by Kullak, "The Wild Horseman" by Schumann.

2. "Once there lived a man whose name was Schumann who wrote music that we still like to hear today. Mr. Schumann had children of his own—boys and girls just like you. He often watched his children play games around the home. Sometimes they played with toys, sometimes they made up their own games which they played with the other children of the neighborhood. Very often, as the children played, Mr. Schumann would sit at the piano and play music to go with the game the children were playing. Could you tell from the music what game you believe Mr. Schumann saw the children play? Here's one—listen but don't tell—we want someone to show us." Play one of the following: "Knight of the Hobby Horse", "The Wild Horseman", "Catch Me If You Can", or "Soldier's March", by Schumann.
3. "Here is music about something that we all have at home. It makes a sound that we have all heard. If you listen closely to the music you can hear it. (Play "The Clock" by Kullak.) What do you think it was? Now, do you think it was a big grandfather clock, a mantel clock, or a very small wall clock? Who will show us? Swing your arm like the pendulum." The children will discover that there are a variety of rhythms in the one piece of music. They can equally well move the pendulum slowly, rapidly, or moderately slowly. The children may then be divided into three groups, one group being little clocks, another the middle-sized ones, and another the large "grandfather" clocks.

Regularity of Beat

In the spontaneous application of bodily movement to music the children will, without direction from the teacher, "keep time" to the regularity of the rhythmic beat. In considering this phase of the rhythm program as a part in the sequence of musical development, the teacher should provide learning activities which

will give the child experience in the fundamental variations of the rhythmic beat. These variations include such items as differences in tempo or speed, difference in the intensity or vividness of the beat, syncopation, and accelerando and ritard.

Differences in Tempo or Speed

1. Rapid rhythms:

- (Running) "Run, Run, Run" by Concone
- (Toy March) "March of the Toys" by Tschaiakowsky
- (Chasing) "Catch Me If You Can" by Schumann
- (Fairies) "Fairies March" by Mendelssohn
- (Witch) "Witch's Ride" by Humperdinck
- (Gallop) "Finale" (William Tell Overture) by Rossini
- (Gallop) "Wild Rider" by Schumann
- (Gallop) "Light Cavalry" by von Suppe

2. Moderate Rhythms:

- (March) "Soldier's March" by Schumann
- (March) "Aida" by Verdi
- (March) "Alceste" by Gluck

3. Slow Rhythms:

- (Dwarfs) "Dwarfs" by Reinhold
- (March) "March" by Hollaender
- (Wheelbarrow) "Wheelbarrow Motive" by Anderson
- (High Stepping Horses) "High Stepping Horses" by Anderson
- (Dead March) "Saul" by Handel

In addition to the activity suggested in connection with the foregoing materials, the teacher may also have the class "keep time" by clapping, tapping with rhythm sticks, marking on the blackboard to the music using long dashes or inverted l's. Small children enjoy imitating the instruments of the band or orchestra, or to play "follow the leader", in which a child is selected who will alternately clap, mark time with the feet, sway, march with the hands, or any other suitable activities which come to mind, the leader starting the activity with the others of the group joining him.

Measure or Accented and Unaccented Beats

The pulsation of rhythmic beats in music rarely occur with equal stress or intensity. They are usually grouped into ac-

cented and unaccented sounds. The most common groupings found in music are double measure (loud-soft, loud-soft, etc.) or triple measure (loud-soft-soft, loud-soft-soft, etc.) Four and six beats to the measure are also common, but are compounds of double and triple. Four is a compound of two and six is a compound of either two or three.

1. Double Measure:

- "Soldiers March" by Schumann
- "The Question" (French Folk)
- "Twinkle, Twinkle, Little Star" (Traditional)
- "Bridge of Avignon" (French Folk)
- "Dixie" by Emmett
- "March" (Nutcracker Suite) by Tschaikowsky

2. Triple Measure:

- "Skater's Waltz" by Waldteufel
- "After the Ball" by Czibulka
- Minuet "Don Juan" by Mozart
- "Waltz in A flat" by Brahms
- "Winter Good-Bye" (German Folk)

Teaching Activities

1. Clapping. Instead of clapping with equal intensity to each beat of the music as was done in establishing a response to regularity of beat, this activity may now be changed in such a way as to observe the accented beat. This may be done by clapping the loud beat as usual and merely touching the palm of the hand with the fingertips on the soft beats. Or, clap the loud beat and move the hands vertically without touching for the soft beats.
2. Clapping and Resting Alternately. This device is sometimes called playing "first and second violins". Divide the class into two equal groups. Ask the group who *pretend* to play "first" violins to clap on the loud beat and rest on the soft beats and the "second" violins to rest on the loud beats and clap on the soft ones. This activity demands a greater degree of control than when each beat is indicated by the child. Thus, it should not be used until the recognition of accented and unaccented beats has been fairly well established.

This method of observing loud and soft beats may be readily employed in the toy orchestra by allowing one group of instruments to play on the loud beat and the other sections on the soft.

3. Marking Accented and Unaccented Beats on the Blackboard.
As the music is being played allow children to draw vertical lines in time with the music, indicating the loud beat with a long dash and the soft beats with shorter dashes in this manner:

| | | | | | | | | | | | | | (double)

| | | | | | | | | | | | | | | | (triple)

This may be varied by marking

o o o o o o o o o o o o o o (double)

o o o o o o o o o o o o o o o o (triple)

The advantage of the "marking" activity is that it affords an opportunity for the child to *see* the rhythm as well as to *feel* it muscuarly.

4. Bouncing Balls. Supply the children with large, inexpensive rubber balls. As the music plays, bounce the ball on the accented beat and hold on the unaccented. This activity can only be accomplished with fairly slow rhythms. It can be applied to either simple measure (double or triple) or to compound. In the latter (four-four, for example), it is best to indicate both the primary and secondary accents by bouncing on the first beat and tossing on the third beat. This will result in bounce, catch, *toss*, catch; *bounce*, catch, *toss*, catch, etc.

This exercise is especially good for rhythmic development in that it demands the element of timing which is essential in all forms of musical performance.

5. Counting. After the recognition of measure grouping has been sufficiently well established that the children recognize and respond readily to double and triple measures and have come to *think* of rhythm in terms of loud and soft pulsations, they may then count softly as they clap,

bounce balls, or mark. "How might we count loud-soft, loud-soft? How might we count loud-soft-soft, loud-soft-soft?" This form of counting will readily become automatic and thus supply a needed transition to the later reading of note values.

Phrasing

The largest of the rhythmic units in music is the phrase. The phrase can be recognized by listening to any simple musical selection and observing the periodic points of rest or "breathing places" in the tune. That is, at regular intervals the music seems to pause briefly and then start again on another rhythmic sweep. These pauses, which occur at the ends of musical phrases, are called cadences. Cadences may be compared to commas and periods in our spoken and written language. For example, the following couplet is made up of two regular phrases:

Phrase One

The world is so full of a number of things,

Phrase Two

I'm sure we should all be as happy as kings.

In like manner the musical phrase is usually uniform in duration, being made up of two, four, or eight measure units. By listening to any simple melody, the units, comparable to the line in poetry, will be readily recognizable.

Teaching Activities

1. Raising and Lowering Hands to the Musical Phrase. A simple classroom device for establishing a feeling for the musical phrase is to instruct the children to slowly raise and lower their arms, turning the palms and changing the direction of the arm movement at the end of each phrase. Stand with the arms extended downward, palms up. As the phrase begins, slowly raise the arms until the end of the phrase is reached. At the cadence turn the palms downward and move the arms slowly downward, reaching the conclusion of the second phrase at the end of the downward movement. Continue this procedure until the music ends. The music used for

phrasing may be either sung, played on an instrument such as the piano, or a phonograph recording. If the children phrase, in this manner, the songs they have learned to sing as a group it is best to divide the group with one section doing the action as the others sing.

2. **Marching and Turning at the Cadence.** Select a group of children from the class to stand in a circle, all facing in the same direction. As the music is played they march in one direction of the circle until the cadence is reached then at the cadence turn abruptly and march in the opposite direction to the end of the second phrase. This may be continued as long as is desired.
3. **Clapping and Resting Phrases Alternately.** Divide the class into two equal sections. As the music is played or sung, ask one section to clap (to the rhythmic beat) to the end of the phrase, the second section beginning to clap as soon as the first section stops and clapping to the end of the second phrase. In this manner, each group clapping and resting each phrase alternately.
4. **Bouncing Balls.** The ball bouncing activity described in the previous unit may be modified to observe the musical phrase by supplying the children with two sets of balls having contrasting colors. One color may bounce on one phrase and the other color on the next, alternating as in the clapping-resting activity previously described.
5. **Musical Illustrations for Phrasing.**
"Soldiers March" by Schumann, "Wild Horsemen" by Schumann, "Amaryllis" by Ghys, "March" by A. Hol-laender, "To a Wild Rose" by MacDowell, "Skater's Waltz" by Waldteufel, "Valsette" by Borowski, "The Glow Worm" by Lincke.

Music Listening Program

The purpose of this section of the music listening outline is to provide listening experiences which assist children in realizing that one of the chief functions of music, as an art, is to enrich and to enhance the meaning of familiar, common-place experiences. There are many approaches to this idea

which may be used in the school. The suggested ideas and type lessons are intended to exemplify the principles of this approach, and at the same time show concrete ways of proceeding in the classroom. For each idea exemplified in a specific lesson, the teacher will find other musical materials and ideas which may be used in much the same way. All lessons must, of course, be adapted to the age level and background of experiences of a particular group of children.

A Composer and His Music

Introduction

"Some time ago there lived a man who wrote music. His name was Robert Schumann. Mr. Schumann believed that music has a way of saying something about the things we see, or hear, or do, that could hardly be said in any other way than with music. Sometimes Mr. Schumann made up music about things for older people, but sometimes he made up music especially for boys and girls."

"I believe that when Mr. Schumann lived the boys and girls must have been much like the boys and girls of today because he wrote pieces of music about the things he saw the children play, both indoors and out-of-doors and these are about the things you play and do. Can you think of some of the things that you like to play that this man might have written music about?"

Development

1. Make a list of the children's suggestions. These will include such things as: skating, tag, toys, playing house, playing soldier, broomstick horses.
2. Discuss briefly with the children how they believe the music for these things might differ. "How would the music for skating be different than music for playing broomstick horses? What kind of music would you write for playing soldier? For playing tag?"
3. "I am going to play for you some of the pieces that Mr. Schumann wrote for his boys and girls. Can you tell which games the music is about?" Play: "The Wild Horseman", "Knight of the Hobby Horse", and "Catch Me If You Can".

4. The children may express a desire to pantomime the music. If so, allow one child to show the others what the music means to him. The class may then choose from a variety of responses those which they believe to be most appropriate for the music being considered. Allow the entire class to pantomime the music.
5. As incidental to this lesson, the children should learn: (a) the meaning of the word composer, (b) the composer's name, Robert Schumann, and (c) the titles of the composition used.

How Familiar Sounds Are Used in Music

Introduction

"Today we are going to think about the way that the sounds you and I hear around us every day are used by composers in making music. Have you ever thought how the common sounds that we all know could be made on musical instruments in such a way that these sounds would be beautiful music? I suppose we might say that all of the ways man has used in making music from the earliest times to the present have been by trying different ways of making the sounds of our natural world more and more beautiful to listen to. Good singing is finding ways of making the sound of our voices as beautiful as possible. The violin—king of all instruments—is only wood and string, but the wood has been so carefully chosen, and so carefully shaped that it produces the best sound that man has been able to get from natural wood. Almost every sound of nature has been used in some piece of music in a way that it sounds even more beautiful than the real sound. Perhaps you have heard music on the radio that you thought sounded like something you have heard before. Who can tell us about music like this you have heard?"

Development

1. As the children suggest ideas, place them on the blackboard.
2. Ask them to suggest other familiar sounds that might be used in music. This list will include such things as the sound of: birds, bees, machinery, wind, rain, animals, clocks, echo, pounding, trains.

3. Follow the discussion with one or more examples representative of natural sounds. There are many from which to select such as: "The Storm" (William Tell) by Rossini, "Wind Amongst the Trees" by Briccialdi, "Toy Symphony" by Haydn, "The Bee" by Schubert, "Flight of a Bumblebee" by Rimski-Korsakoff, "In the Toy-Makers Workshop" by Herbert, "The Whirlwind" by Krantz, "The Clock" by Kullak, "Of a Tailor and a Bear" by MacDowell, "Warblings at Eve" by Brinley-Richards, and "Hens and Cocks" (Carnival of the Animals) by Saint-Saens.
4. Ask the children to notice how many pieces of music they hear on the radio remind them of familiar sounds. Provide an opportunity each day for the children to discuss the music of this type they have heard on the radio, at home, or at concerts.

A lesson of this type may be continued as long as the children are interested in studying it.

Famous Music Boxes

Introduction

"I wonder whether anyone here has ever seen a music box? What kind of music box was it? Did it play light, tinkling music or big, heavy music?"

After the children have discussed the music boxes which they have seen, extend their understanding of the different types by showing them pictures of the small Swiss boxes, the hurdy-gurdy, etc. Brief descriptive material about these instruments may be found in reference sources, and either told to them or reported by appointed children in the group.

Development

1. Tell the children that music boxes must have been fascinating to many of our composers because a number of them have written music to describe these interesting sounds.
2. If pictures (or other examples) of the kinds studied are available, place these where they are easily seen by the class.
3. Play an example of one and ask the children whether they can tell which kind of music box the composer had in

mind. The examples are: "The Music Box" by Liadow, "Fireside Music Box" by Lapitino, and "The Hurdy-Gurdy Man" by Goossens.

4. With older children this lesson is effective in the study of musical instruments. Ask them to suggest which instruments of the band or orchestra they believe would be best suited to represent the music boxes. Listen to the music and attempt to identify the instruments the composer used.

Animals in Music

Introduction

"A French composer whose name was Saint-Saens must have enjoyed animals because he wrote a long piece of music in which he described many of them. If you could write music, what do you think you might try to make the music do in order that the people who listened to it might know what animal you were trying to describe?"

Make a list of the suggestions. These will probably include:

1. Imitate the sound the animals make.
2. Imitate the motions of the animals in walking, jumping, or climbing.
3. If the animal is funny, the music would be funny. If the animal is dangerous, the music might sound dangerous.

Development

1. "In order to help us with our listening, I'm going to write on the blackboard the names of the animals Mr. Saint-Saens describes in his 'Carnival of The Animals'."
2. "The list of names on the blackboard are not in the order in which they appear in the music. You will have to listen carefully in order to tell which animal is being described." (Play the music.)
3. "Which of the animals did Mr. Saint-Saens describe by representing in the music the sounds of the animal? Did he describe the movement of some of the animals? Did he describe the *sounds* and the *movements* of some of them? Did he think some were funny? Did he think

some were fierce animals? Did he think some were beautiful and graceful? What familiar tune did he use for the elephants?"

4. After the initial hearing of the music, it will probably be necessary to repeat parts of the suite. This will be especially true for those parts upon which the class disagrees concerning the interpretation.
5. This composition may be used in the upper grades for the continued study of orchestral instruments. "What instruments are used for the elephants, the lion, the aquarium, etc.?"
6. Other descriptive examples of animals in music are: "Of a Tailor and a Bear" by MacDowell, "On the Trail" (Grand Canyon Suite) by Grofe, and "The Whistler and His Dog" by Pryor.

A Sea Piece

Introduction

"Many of our great composers have written music about the sea. Not the least of these composers is our own great American composer, Edward MacDowell. Mr. MacDowell lived in New York City during the winter. He and Mrs. MacDowell spent the summers in the hills of New Hampshire. These hills were not far from the ocean, and he must have sat on the shore often and watched the large waves as they rolled in from the great Atlantic. Mr. MacDowell must have enjoyed both the sea and the hills because he wrote a great deal of music about both. He called the pieces he wrote about the woods and flowers 'Woodland Sketches' and the music about the sea he called 'Sea Pieces'. Today we're going to hear one of the 'Sea Pieces'. Perhaps some other time we can hear some of the music about the woodland."

Development

1. Allow the class to suggest several contrasting ideas about the sea. The children may comment about the sea in a storm, a calm sea, the difference between the sea in winter and the sea in summer.
2. If possible, follow the discussion with two contrasting pictures of the sea. One which is illustrative of large

waves, and another of a warm, placid sea. Place the illustrations side by side in order that the contrasts are readily seen by the entire class. Discuss the contrasting pictures briefly. Allow the children to look at the pictures as they listen. "Is the music more like the first or the second picture?" (Play the music.)

3. Music: "To the Sea" by Edward MacDowell.
4. If desired, a second selection may be used which suggests placid or rippling water such as: "Reflections on the Water" by Debussy, "Barcarolle" (Tales of Hoffman) by Offenbach, and "By the Waters of Minnetonka" by Lieurance.

Music About Two Kinds of Flowers

Introduction

"When we talked about Edward MacDowell and listened to his music about the sea, I mentioned that he also wrote music about something else. Who remembers what it was? Today we're going to hear the music he wrote about two different kinds of flowers: the wild rose, and the water lily."

1. "What kind of flower is a wild rose? How does it differ from the water-lily?" The children will suggest such differences as the texture of the petals, fragrance, color, its surroundings, etc.
2. "If you were going to write music about a wild rose what kind of music would you write? For a water-lily?"
3. Play "To a Wild Rose" and "To a Water-Lily". Provide for a brief discussion at the conclusion of each composition.

A Second Hearing

"Did you notice how much heavier the accompaniment for the water-lily melody was than for the wild rose? I'm going to tell you something more about one of these pieces and then we'll hear them again and find out whether there's a difference that we didn't hear before."

"One day when Mr. MacDowell was out driving his horse and carriage through the hills he came upon a high road. In

a small valley to one side of this road was a muddy slough, and out of this dark, thick mud was growing a great mass of the purest white water-lilies. There was something about the idea of such pure flowers growing in such ugly mud that impressed Mr. MacDowell. He stopped the horse and looked at the flowers for a long time before driving on again."

"Let's listen to this music once more. Which part reminds you of the white water-lily? Is there music here that reminds you of the muddy slough?" (Play "To a Water-Lily".)

"Is the accompaniment 'To a Wild Rose' like the chords in the water-lily music? Do wild roses grow in mud or on a grassy bank?" (Play "To a Wild Rose".)

Music and a Story

Introduction

"One day a tailor sat cross-legged on his sewing table making clothes. He was happy doing his work, so as the needle went in and out of the cloth, he whistled a gay tune. Even though he was very busy with his work, something at the open door of his shop attracted his attention. He looked up, and what do you think he saw standing in the doorway? It was a large, black bear. Of course, the tailor was frightened and tried to quickly think of something to do to drive the bear away. He had nothing in his shop that would frighten a bear, but he suddenly remembered that not long ago he had seen a tame bear dancing to the music of his keeper's violin. The tailor liked music and always kept a violin on his shelf, so he dropped his sewing, picked up the violin, tuned it quickly, and started to play a dancing song. But the bear wasn't pleased with it, and showed his disapproval with a loud, long growl. The tailor suddenly realized that bears are big and awkward and can scarcely dance to fast music, so he stopped, tuned the violin again, and began to play much more slowly. This made the bear happy. He began to dance to the tailor's playing."

"After a while a man came to the door with a large chain. He was the bear's master. The bear had wandered away and was lost. The keeper led him away, and the tailor went back to his work."

Development

1. At the conclusion of the story, play the music of a "Tailor and a Bear" by MacDowell. Ask the children to find

as many things as possible in the music that they heard about in the story.

2. In providing for a second hearing of the music, ask the children how many heard the tailor's sewing tune. How many times was it played? Listen again.
3. Was the bear angry or glad at being taken away from the tailor shop by his master?
4. Who found the place in the music where the tailor played slowly enough for the bear to dance?

Each question may provide an interest for hearing the music again. Of course, too many hearings are not usually advisable during one lesson. After the children have heard the music once or twice, leave it for several days before playing it again.

A Story of Music and Magic

Introduction

"This is a story about a sorcerer (one who makes magic) and a young pupil who lives with him (apprentice) learning the art of sorcery from the master."

"It seems that the master needed to leave his house for a short time in charge of the apprentice. Upon leaving, the master told the apprentice to do the daily chores such as washing the dishes, sweeping the floor, putting the house in order, and finally, to fill all of the kettles and jars with fresh water from the spring. After the sorcerer had gone, the apprentice decided that this was the time to practice some of the things of magic which the sorcerer had taught him. No doubt the boy had tired of the work and still the water hadn't been carried from the spring!"

"He had seen his master send the broom for water. Why couldn't he do this as well as the master? He would try it, at least. So he tapped his magic wand and repeated the magic formula and sat back to see what would happen. Surely enough, slowly and awkwardly the broom straightened up from its resting place in the corner and hobbled away to the spring with the water pails. The apprentice watched as the broom carried in pail after pail of water. The kettles and tubs were finally filled to the top, and the apprentice again tapped the wand and repeated the magic words which were intended to stop the broom.

But nothing happened. He tapped his wand and repeated the words again and again, but the broom kept at its job. The tubs overflowed, and the room flooded with water. Finally in despair the apprentice picked up the axe and struck the broom a sharp blow cutting the broom squarely into two pieces. There was a moment's pause, to be sure. But then, both halves of the broom take their pails and start for the spring! When the house is almost filled with water, we hear the returning footsteps of the master. When he sees what is happening, he quickly gives the magic sign which stops it all."

"If you were the apprentice, how would you feel about being caught at such a prank? Do you suppose there will be anything in the music that will suggest to us what happens to him?"

Development

1. Following the above introduction, play the music, "Sorcerer's Apprentice" by Dukas, without interruption. Permit the children to comment about the parts of the music they especially noticed and enjoyed.
2. Raise questions about the music which create an interest in hearing parts of the music again. These questions will include such ideas as:
 - a. "How does the composer tell the listener that the music is about a magic story or scene?" (Play the introduction.)
 - b. "What instruments are used to represent the magic formula? Is the same tune used each time the formula is given? Is it the same when the master gives it?"
 - c. "How does the composer describe water in the music?"

A Concert Overture

Introduction

"Unlike many composers of music, Felix Mendelssohn did not have to live in poverty. His parents were well-to-do, and gave their son all the advantages of a life of leisure. He was free to travel, read, and enjoy the good things of living. Under such circumstances many boys would neglect work and their

own self-development. This was not true with Felix. He worked hard and wrote much beautiful music that people enjoy as much now as ever. I suppose that this is the reason why his music is nearly always bright, gay, and cheerful. Often when composers live in fear of poverty, their music is sad and expressive of trouble."

"On one occasion while Felix was still a young man, he was traveling in England. While there he learned that on one of the Hebrides islands there was an interesting natural phenomenon called Fingals Cave. This cave's only entrance was an opening directly from the sea. To enter the cave and explore it could be accomplished only by means of a small boat. Mendelssohn visited the cave and was so impressed by its mysteriousness and its majesty that he could scarcely describe it with words. In a letter to his sister about this experience he said that words failed him, so he sent sixteen measures of music that expressed what the cave meant to him. Some time later, he took these sixteen measures and used them in a longer composition to describe his impression of the whole experience. He called it the 'Fingals Cave Overture'."

Development

1. "Listen to the music. Can you find the part that was probably included in the letter to his sister? Why do you think it was this part?" (Play the music.)
2. "Was the sea outside the cave a rough or a calm sea? Did the swells from the ocean reach the water of the cave's floor?"
3. "Do you hear anything in the music which might represent the screech of the wind across the ocean waves? What instrument did the composer choose to represent this?"
4. "Was the cave dark and mysterious, or was it well lighted?"

Several hearings may be necessary in developing an adequate interpretation of the music. Provide sufficient time between repeated hearings.

A Legend in Music

Introduction

"Norway is noted for its folk stories. These stories are often passed on from one another by telling them, while others have

been used by writers as the story for great poems and dramas. The story of Peer Gynt is one of the Norwegian folk stories that has been in both a great poem and in great music. Ibsen, the famous author, used this story in writing one of his best poems, and Grieg used it in writing a series of pieces which he called the 'Peer Gynt Suite'."

"The story goes that there lived in one of the small Norwegian villages a boy whose name was Peer Gynt. He lived alone with his aged mother, Ase (Osah), and probably since Peer Gynt was Ase's only son he had his own way too much of the time and grew into what we would call today a spoiled boy."

"He was reckless—always looking for excitement and adventure. Sometimes his adventures were real and sometimes they were spun out of his own imagination. When he would come home cut and bruised as the result of a fight in the village, he would tell his mother that he had been in the high mountains and had ridden like the wind across the highest ridges on the back of a reindeer, and when the reindeer stopped too suddenly for him at the edge of a sharp cliff, he was tossed headlong down the side of the mountain."

"One day there was to be a wedding in the village. It was the custom in Norway that all of the villagers celebrate the wedding festivities together. On this occasion, however, the people in charge of the wedding decided that Peer Gynt should not be invited since his influence at such gatherings was never for the best. However, this was really not the way to handle Peer Gynt. All during the day before the wedding he sat on the hillside overlooking the village. As he watched the merry-makers dancing on the village green, he made spiteful plans of revenge. What could he do to cause excitement and trouble for the gay villagers? Suddenly an idea came to him. He would steal the bride and keep her away until after the time which had been set for the wedding! So, unnoticed, he slipped into the crowd and carelessly danced with first one girl and then another until he found Solvejg, the girl who was to be the bride at the wedding. He danced with her until he thought no one was watching. Then picking her up he started up the mountain. When Solvejg was finally discovered to be missing, Peer Gynt had carried her far away."

"It may seem strange, but Solvejg finally became more interested in Peer Gynt than in the young man she had intended

to marry. After all, Peer Gynt was an adventurer, but underneath his ragged clothes and his outward desire for excitement, was an honest and lovable person. They were married and lived together for some time in the mountains of Norway."

"But we can scarcely say that they lived happily ever after. Although Peer Gynt's better self vowed its faithfulness to Solvejg, his adventuresome nature would still frequently win over his better judgment. On one occasion when he was walking alone through the mountains, he saw at a distance the queen of the trolls. He followed her, unnoticed, as she walked slowly away. After watching her for some time, she seemed to suddenly disappear into the side of the mountain. Peer Gynt located the place where he had last seen her and found an entrance to a large cave. Again in search of adventure, he walked boldly through the door. There, in the half light, he discovered that it was not an ordinary cave he had found. Instead, it was the large underground palace of the trolls. All around him in small groups stood the little trolls, each wearing a pointed hat, and at his side a small sword. When Peer Gynt entered, they talked excitedly together. They began moving about as they talked and slowly they moved closer and closer to their unexpected visitor. Finally each troll pulled out his sword and jabbed furiously at Peer Gynt. Peer jumped this way and that. Although he was the larger, he finally fell, as there were hundreds of trolls against him. They pounced upon him and beat him viciously. They rolled him out of the cave door and down the mountainside." (Play "In the Hall of the Mountain King".)

"When Peer Gynt failed to return, Solvejg searched for him and finally found him at the foot of the mountain where the trolls had left him to die. She took him to their home. After much care he recovered from the injuries."

"One spring morning following his recovery he awakened early and looked out of the cabin to watch dawn break slowly over the hills. The flowers were beginning to bloom, the birds sang, and the world seemed filled again with new life and beauty. It was the fineness in Peer Gynt that saw the beauty in the new spring morning." (Play "Morning".)

"After once again realizing the beauty in the world around him, and the unfailing devotion of Solvejg, he resolved not to be tempted by adventure again. All went well until one day when wandering along the seashore he came upon the wharves

where the large ocean ships were being loaded in preparation to sail for foreign ports. What excitement the sailor must have who sees new lands! Before he could think it over, Peer Gynt had hid himself in one of the ships, and in a short time was far out at sea. His ship landed in America where Peer Gynt went ashore in search of more adventure. This was before our Civil War when some of our people were engaged in slave trading. Peer Gynt thought this to be an exciting business, so he decided to try it. In a few years he had become extremely wealthy. During this time his longing to see Solvejg, his mother Ase, and his native land again had become a great power over him. He decided to leave America, so he bought a yacht and with himself as the chief navigator set out for Norway. He was taken far off the course and was finally shipwrecked on the shores of Arabia."

"With his ship and provisions lost, he wandered inland until he met a prophet from one of the tribes. The prophet was clothed in the finest of robes and wore the most expensive jewels. He rode a white horse and was, all in all, an impressive person. Peer Gynt decided that it would be great sport to act as a prophet to the neighboring tribes, so he managed to get the real prophet's horse, his robes, jewels, and even his long, white beard. Dressed, then, as a wise man, he rode into one of the Arabian camps and was greeted with much ceremony. No one expected him to be an imposter except the princess, Anitra. She discovered that even though Peer Gynt had no wisdom, he did have money. By means of an alluring dance she managed to get it." (Play "Anitra's Dance".)

"Without money and other needed provisions, Peer Gynt made his way across the continent and after a long, slow journey finally arrived at his Norwegian home. He found his mother, Ase, on her death bed. He sat beside her for a long time talking to her of the many wonderful things he was going to do. He was again for a short time not Peer Gynt the adventurer, but Peer Gynt the poet. Perhaps no more sincere expression of love, devotion, and sorrow has ever found its expression in music than Grieg's interpretation of this scene." (Play "Ase's Death".)

"Although Grieg included only the above four parts in this 'Peer Gynt Suite', he wrote a second suite in which he gives us a song which Solvejg sang as she sat outside her cabin door waiting and watching for Peer Gynt's return. This song is one of

music's most notable expressions of faith and devotion." (Play "Solvejg's Sunshine Song".)

A Visit to the Park

Introduction

"One day a little girl and boy went to the park with their mother. They had a wonderful time and saw many interesting things. When they returned home in the evening, someone asked them what they had seen, and what they had done at the park. They said, 'We saw many things and we did many things. We saw some soldiers marching. We saw the horses gallop past. We played in the swings. We saw a fountain in the park where the birds came to drink. And we saw the sun go down behind the trees and a little moon come out in the sky.' "

Development

"Later they were playing some music at home. They played one piece and the little boy said, 'Why, this sounds just like the horses we saw gallop by!' The little girl said, 'Yes, and this makes you think of the pretty little moon way up in the sky, doesn't it?' "

"Let us see if we can find the pieces they were thinking of." Play the music. "Kammenoi-Ostrow" by Rubinstein (fountain section only), "A Military March", and "The Wild Horsemen" by Schumann, Finale "William Tell" by Rossini or "Andantino" by Thomas.

Other ideas may be used as a substitute for those suggested in the above story. In this way the teacher can adapt the lesson to the material available.

A Gypsy Dance

Introduction

"The folk people of old Hungary had a dance they called the Czardas. Since the gypsies had no dances of their own, they used the music and dances they found in the countries through which they roamed. They must have enjoyed the Czardas, for it is said that they used it a great deal."

"This dance is made up of two different movements. One they called the 'friska' (fast) and the other they called 'lassen' (slow). Can you guess from the sounds of these two words what the two movements are like?"

Development

1. "Listen to the music. Will all the boys raise their hands when they think the 'friska' movement is played? All the girls raise their hands when they hear the 'lassen' movement." (Play the music, "Hungarian Czardas", arr. Hubay.)
2. "Did you notice the peculiar instrument that played this dance? It is an old instrument called the cymbalom or dulcimer. It looks like a very small grand piano, but instead of playing it with keys, the player holds a soft mallet in each hand and plays the instrument by striking the strings with these mallets much as a kettle drummer plays his drums."

Music and Springtime

Introduction

"There is something about the return of spring after the long winter months that seems to bring new happiness to all of us. When we feel again the warm sun, and the soft breezes on our cheeks; when we see the grass turn green and buds on trees and flowers swell and burst, we have a sense of joy that is like nothing else in the world. We know that the return of spring must give nearly everyone the same feeling of happiness, for so many poets of all countries have written poems about spring. So many painters have tried to keep spring by painting pictures of it, and musicians have expressed their joy of spring in music."

Development

1. Follow, if possible, the above setting with a short poem that conveys the spirit of spring. Show contrasting pictures which express the artist's idea of it.
2. "We have several examples of springtime in music. Each is well-known by people who enjoy music, and each represents a different idea of spring. Which seems to you to be most nearly like your idea of spring? ('Rustle of Spring' by Sinding, 'Spring Song' by Mendelssohn, or 'To Spring' by Grieg)."
3. At the close of the lesson write the names of the compositions and the composers on the blackboard.

Toys in Music

Introduction

"Franz Joseph Haydn was a composer who lived long ago. He must have been a man who liked fun, for he wrote music that was sometimes intended to play pranks on his listeners. One time after he had learned this his employer intended to discharge him and all of his orchestra, he wrote a long piece of music in which each player's part ended at a different time. When one player finished his part of the music, he would stop, take his candle from the music rack, and walk off the stage. As soon as this player had gone, another player came to the end of his part and he would do the same. This kept on until only Haydn himself was left. And this was all worked out in the music itself when it was written!"

"Although the music of Haydn's we are to hear today is not a prank, we can imagine how he must have smiled to himself as he wrote it. It is a symphony about toys which he called 'Toy Symphony'. Like the large symphony, it is made up of several parts or movements. Like his larger symphonies, too, he named the movements. (Write the titles of the movements on the blackboard.) In each movement you will hear the familiar sounds of toys you have heard before. What do you think some of these might be?" (Write the suggestions on the blackboard. Play the music.)

Prior to a second hearing, prepare the children more specifically for the music by saying: "How many heard a toy bird? What is the bird call Mr. Haydn uses in the music? Did anyone hear a toy horn? What tune did it play? Did you hear mechanical toys that run by being wound up?"

As an additional motive for attentive listening, the children enjoy taking turns in holding large cards upon which these objects are represented. A magazine picture of a toy horn, a bird, a mechanical toy, etc., pasted on a card will do. Choose certain children in the class to each hold a card with the instruction to stand and show the card to the class when the object represented by the picture appears in the music.

Witches and Pranks on Hallowe'en

Introduction

"We all have fun on Hallowe'en. Even composers have written music about it. Some have written about playing pranks,

and others have written about witches. Can you tell which music is about the witch and which is about playing pranks?"

Development

1. "How would the music about the witch be different from music about pranks? Listen. Can you tell what these composers thought about it?" (Play the music, "Witches Dance" by MacDowell, "Witches Ride" (Hansel and Gretel) by Humperdinck, and "Huckleberry Finn" (Mississippi Suite) by Grofe.)

A Lesson on Dances of the People

Introduction

"Some of our most interesting music has come from the dances of the people. This is true not only of the actual music to which the people danced, but our best composers have also taken this dance music and made it over into music which is intended to be listened to rather than to be used for dancing."

"First, let us compare the music of some of these dances, both new and old. For the older dances we will use the minuet, the gavotte, and a country dance from Old Ireland, and for the new we will use a fox-trot and a waltz. Perhaps, since the waltz is both old and new we can have both a new one and an old one."

Minuet: "The minuet is an old dance used by the aristocratic people in Europe and also in this country during the days of George Washington. We should remember that at that time the people dressed in much finery. The men wore powdered wigs, silk stockings, fine lace collars and cuffs, and slippers. The women wore long dresses with hoop skirts, much lace, and fine jewelry. There was a daintiness and a charm in all of the ways of living. Of course, their dance would have to be in accord with these things. Would you expect the minuet to be slow and stately, or a rapid dance? Would it be graceful or big and powerful? We shall find out by hearing a minuet and comparing it with another popular dance of long ago."

Waltz: "Today the waltz is our slow, graceful dance. Years ago it was the lively dance of the people and much faster than the present waltz. Instead of a dainty stepping movement the waltz has always been used with a whirling, swaying movement.

Even though the clothes of the people long ago were cumbersome they could dance in large whirling movements."

"With these things in mind about the old waltz and the minuet, do you think you could recognize them from the music?" (Play examples of each using "Minuet" (Don Juan) by Mozart, "Minuet in G" by Beethoven, "Blue Danube Waltz" by J. Strauss, and "Waltzes" by Brahms.)

"Did you notice some differences between these two dances that we have not mentioned? Do you think the music of these dances was written to be used for dancing or were they written to be used for listening?"

Country Dance: "Would you expect the dances of the people who till the soil to be as graceful as the dances used by aristocratic people? Let's listen to a country dance from Old Ireland. What does it tell you about the people?" (Play "Irish Jigs" (Medley), and "Irish Washerwoman" Trans. by Sowerby.)

American Popular Dances: "Our own people dance a great deal. The music, like the music of the other dances we have heard, expresses the life of its people. What is there about our own lives that you believe will be reflected in our dances?"

In the above connection the class should realize that most of our dances have come from life in the city, and hence, reflect noise and speed. No doubt the uncertainty expressed in the development of logical melodies and rhythms are suggestive of uncertainty in our beliefs. We are sometimes victims of exaggeration. It can be shown that often our people pride themselves in exaggeration in matters pertaining to the bigness of buildings, dress, marathons, and the like.

Examples of music for the popular dance are readily available. No illustrations need be listed here.

Three Kinds of Music

Introduction

"Music expresses thoughts, feelings, and ideas. Have you ever questioned how it is possible for a language without words to do this? People become so accustomed to using words to convey to others their ideas that they often think it is only words that talk. Have you ever had your mother or father speak to you in such a way that even though you misunderstood their words you realized that what was said was important?"

The sound of the voice may be angry, commanding, sad, happy, or weary, without words. This is a part of our language—a part that is often used in music.”

“In our language, too, there are thoughts expressed by the sounds of the words. When we speak of the ‘buzzing’ of the bee, the ‘howling’ of the wind, or the ‘babbling’ of the brook the words themselves sound like the thing we are describing. The word ‘howling’ sounds like the wind; the word ‘buzzing’ sounds like the bee.”

“Then, also, we have all heard people speak whose voices were smooth and pleasant to hear. There is something about the fine tone, the rhythm of the words and sentences, and the correct rise and fall of the voice that pleases our ears. Without listening to their words at all their speech is beautiful.”

“Do you suppose we could find these same ideas in music? Music that (1) *suggests* to us the feelings that the composer has about something, (2) music that *imitates* the sounds or motions of the thing the composer is describing, and (3) music that is *pure* or without an idea but sounds pleasant to our ears. Can you tell which idea is used most in each of these compositions?”

Imitation: “The Bee” by Schubert, “Flight of the Bumblebee” by Rimski-Korsakoff, “The Clock” by Kullak, “Toy Symphony” by Haydn, and “Carnival of the Animals” by Saint-Saens.

Suggestion: “To a Wild Rose” by MacDowell, “Traumeri” (dreaming) by Schumann, “Funeral March” by Chopin, and “Nocturne” (night) by Grieg.

Pure: “Air for the G String” by Bach, “Andante Cantabile” by Tchaikowsky, “Moment Musical” by Schubert, and “Largo” (Xerxes) by Handel.

Folk Music of America

“America has made ‘home-spun’ music. The people in our country who have lived close to the soil have made ‘home made’ songs and dances in much the same way that they have made their clothes, homes, and tools out of the simple materials they found around them. No one knows very much about the way in which these songs and dances were made. Some believe that the songs are an expression of group cooperation in which sev-

eral people took part—one starting the song and others adding to it until it reached an ending. Others believe that in every group there were special music-makers who made the music much as composers do today, but since these musicians had not learned to write music on paper, it was passed on to others by singing it to them. After a song was once started in this way it was then passed on from family to family and from mothers and fathers to their children until finally no one could remember how it began. These songs, which are passed on from one to another, and which have an unknown composer, are called ‘folk songs’.”

“Many of the folk-songs used in our country were brought here by the people from other lands. The English people sang the songs they brought with them. This was true also of the Germans, the Italians, the Irish, and the French. Since these people already had songs to sing, they had little need for making new ones.”

“Some of the folk-music of America which has attracted most attention and which, no doubt, grew up in our own country, are the songs of the cowboy, the Indian, the Negro, and the mountain people.”

The Cowboy

1. “What do we need to know about the cowboy in order to understand his music?”
 - a. He lived a lonely life, often riding the range day after day without seeing another person.
 - b. Most of the time he moved slowly. His horse was usually calm and steady rather than a wild, spirited animal.
 - c. He lived on the plains. The long endless line of the rolling hills and plains was a soothing and perhaps monotonous rhythm to him.
 - d. He wore simple, yet practical clothes, and ate simple meals.
 - e. He heard the sounds and the quietness of nature.
 - f. He was away from his home. Often he thought of his mother or his friends.
 - g. The movements around him were the rhythms of the cattle, his horse, and the movement caused by wind.

2. "Knowing the cowboy as we do, do you believe his songs will be—
 - a. Jolly or usually lonely?
 - b. Will they talk about cheerful things?
 - c. Would you expect to hear the rhythm of the horse, or clatter of hoof beats in the music?
 - d. Will the melody move quickly up and down or will it move in rolling lines like the plains?
 - e. What would you expect the words of the songs to be about?"

Cowboy songs: "Old Paint", "The Cowboy", "The Roving Cowboy", "Cowboy's Dream", "Bury Me Not on the Lone Prairie", "Whoopee-ti-yi-yo", "When the Work's All Done This Fall", and "Home on the Range".

The Negro

1. "What do we need to know about the Negro in order to understand his music?"
 - a. When most of his songs were created he lived under slavery. Life on this earth was not pleasant for him so he sang about a happier life after death.
 - b. In the "Deep South" he lived in constant fear of being taken away from his family. In the "Upper South" he lived a life of greater security and certainty.
 - c. He enjoyed the simple luxuries of daily living.
 - d. He had little education.
 - e. He heard the music of the white people on the plantation. What effect would this have on his songs?
 - f. His work was hard. It took much strength and long hours.
2. "Knowing the Negro as we do, would you expect to find in his songs?
 - a. Sad and mournful songs or happy and gay?
 - b. Could you tell which of his songs came from the "Deep South" and which came from the "Upper South?"

- c. What would you expect him to ask that his Heaven be like?
- d. Would his songs be more like our music or most like the music of his African ancestors?
- e. Would you expect the songs to be slow or fast?
- f. Many of his songs repeat simple words and phrases over and over. Why?
- g. After you have learned several Negro melodies find out how many of them you can play, using only the black keys on the piano. The Negro used a scale composed of only the five tones *do re mi fa sol la*. Can you sing this scale?"

Negro songs: "Nobody Knows the Trouble I've Seen", "Swing Low, Sweet Chariot", "The Battle of Jericho", "Water-boy", "Steal Away", "Peter, Ring Dem Bells", "Heaven Song", and "Shortnin' Bread".

The Indian

1. "What do we need to know about the Indian in order to understand his music?"
 - a. The Indian made songs about the things around him. He had a song for his pony, his bow and arrow, his cooking utensils, his games, hunting, planting, harvesting, etc.
 - b. Many of the Indian songs were owned by one person. When a song was owned by one Indian others were not permitted to sing this song. A song owned by one Indian could be sold to a buyer. The exchange was made by teaching the song orally to the buyer. After a song had been sold the original owner was not permitted to sell it again.
 - c. The Indian's musical instruments were usually the drums, rattles, and flute. The drums and rattles were used for ceremonials and war. The flute was used largely for love songs.
 - d. The flute songs were made to fit the particular flute upon which they were to be played and no two flutes were tuned exactly alike.
 - e. The rhythms played by the Indian were often very difficult. Sometimes he played six beats with the left hand at exactly the same time he would play seven beats with the right hand.

Making and Playing Musical Instruments

In addition to the experience with music through singing and listening, children should become familiar with music produced through a variety of other tonal media. During the early stages of instrumental development, the child should learn that beautiful and expressive musical sound can be produced through simple methods of refining the sounds of commonplace materials found in the immediate environment. The sounds of glass, wood, clay, and metal, when carefully tuned and thoughtfully played, are capable of producing expressive musical tones.

The present outline does not include information on the teaching of standard orchestral and band instruments, but deals exclusively with the making and playing of simple "home made" and inexpensive commercial instruments. In defense of this plan, it should be said, that it is the belief of many leading music educators that the playing of simple instruments should precede the playing of instruments which demand difficult manipulative skills. Probably the discouragement, and often the defeat of the learner, in playing an instrument can be attributed to introducing the difficult instrument too soon in the process of the child's musical development. If, through the playing of simple instruments, the child tastes musical success, he will need no additional motivation for the subsequent learning of a more difficult instrument. Through the playing of the simple percussion and melodic instruments described in this section, the child learns the simple muscular coordinations essential to playing, he learns to hear pitch through the use of a variety of tonal media, he develops a response to fundamental rhythms, and he learns to read simple notation. With these attributes as a part of his musical background his later success and interest in playing is practically assured.

The Percussion Band

Probably the most widely used approach to the beginning playing of instruments is through the percussion, or "toy" band. Wisely used as a teaching agency, this activity can possess genuine musical merit. Its value is not restricted to rhythmic experience alone. The instruments used, even though they are not tuned to a definite pitch, do produce tones which may have a musical quality. If the tonal factors of this organiza-

tion are overlooked by the teacher the activity loses its chief musical value.

Some of the musical values which should result from the percussion band are:

1. The ability to discriminate between pleasant and unpleasant sounds. The children should experiment with a great variety of sound producing materials and be permitted to accept or reject the use of instruments in their organizations. They should be encouraged to bring to school sound-making materials which they believe might be used in the band.
2. The ability to discriminate between the sounds of different kinds of materials. They should be able to identify "by ear" the sound of wood, metal, glass, skin, etc.
3. The recognition that the sounds of crude materials may be refined and thus be made musically acceptable. For example, that a drum beater of wood, rubber, leather, or felt each produces a different kind of sound.
4. The ability to adapt the sounds of the percussion band instruments to recorded music, piano music, and songs in such a way that the general character of the music is reflected in the instrumentation. This will include a recognition of like and unlike phrases and themes in a musical composition.
5. The ability to respond to the basic aspects of rhythm. This includes a response to regularity of beat and its variations, accented and unaccented beats, and the musical phrase. (See rhythm program.)
6. The ability to listen attentively to music.
7. Growth in the social and personal disciplines essential to participation in music, as a group activity. This will include such things as watching the director and playing on the instrument at the proper time only.

Instruments commonly used in the percussion band are: rhythm sticks, triangles, bells, tambourines, wood block, cymbals, sandblocks, drums, xylophone, bird whistles, and rattles. All of the instruments for the percussion band are commercially available. However, few purchases of instruments need be made

since most types may be "home made" by the pupils and the teacher.

Rhythm Sticks

The "sticks" are the nucleus of the percussion band. As many pairs may be used as desired. Round, hardwood sticks about ten inches long and one-half inch in diameter are used; one held in each hand and struck together to the beat of the music. Material for rhythm sticks is available at lumber yards in the form of doweling. Children enjoy cutting the doweling into proper lengths and painting it with bright colors.

Sandblocks

Sandblocks may be made by cementing strips of moderately rough sand paper to small blocks of wood about two inches wide and five inches long. If some softer material, such as felt or blotting paper is used to pad the block as a base upon which the sandpaper is placed, the wearing qualities will be improved. Discarded erasers make excellent sand blocks when surfaced with sandpaper. A block is held in each hand and played by "swishing" the blocks together to the beat of music. Two or three pairs are needed in a band of twenty or twenty-five pieces.

Drums

Of all the instruments probably the drum can be made from the widest variety of materials. The most important thing to keep in mind when making a drum is the quality of tone which the final product will have.

The most satisfactory drums may be made from inner tubing stretched tightly over one or both ends of a large tin can or small keg. A two-pound coffee can can be used for this purpose. When a can or bucket is used for the body of the drum, the inner tube must be fastened on with wire wrapped tightly around it. It is suggested that a can or bucket be chosen that has a good rim or groove around the top. The wire should be wound below this rim to insure against slipping.

The inner tube must be drawn tightly across the opening in order to insure a good tone. One or two persons should be

employed to stretch the rubber across the opening while another stretches and fastens the wire securely.

If a small wooden keg or butter tub is used the rubber may be satisfactorily fastened by using thumb tacks or carpet tacks driven through the tubing rather close together.

Other materials which may be used for the body of the drum are round two-gallon oil cans, chopping bowls, cardboard tubes around which linoleum is rolled, and many other things which may be found around the home or school. Once the children understand the principle of the resonator they will be very resourceful in suggesting possibilities with which to experiment.

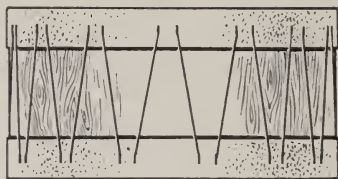
Very good drum heads may be made from skins of animals, either tanned or untanned. Broken drum heads from drums used in the school band or orchestra can be used for this purpose. If hides of animals are used for drum heads it is necessary to remove the hair from them. The simplest method to do this is to bury the hides in warm, moist earth for several days. After that time, the hair may be scraped off with a knife or scraper.

When making heads from skins, the skins should be cut so that they overlap the opening about two inches all the way around. The skins must then be soaked in tepid water until they become very soft and pliable. They are then stretched over the opening and fastened. Care must be taken against stretching the head too tightly for as the skins dry, they shrink and if they are put on too tightly they will crack as they dry. By observing the head as it dries, one can usually detect the beginning of any split. It is suggested that if the head appears to be splitting, it be removed immediately and resoaked and put over the opening—this time a little looser.

If the body of the drum is of wood or heavy cardboard thumb tacks or carpet tacks may be used to fasten the skin. If the body of the drum is of metal or other hard material probably the most satisfactory method is to make a two-headed drum and lace the two heads together. This is best done by using leather thongs which have been softened by soaking.

Instead of punching holes near the edge of the drum-head material, it is suggested that two small vertical cuts be made about three-eighths of an inch apart. The lacing is then passed through each cut in such a way that the lacing pulls on the

wider surface. This eliminates the tearing of the head by the lacing. See illustration below:



If a single-headed drum is desired on a metal or hard-material body the following method is recommended. Extend the skin 2 or 3 inches over the sides of the drum. Wet the skin and press it over the opening. While holding the skin in place, wrap strong cord around it several times. When using a large can or pail be sure the cord is wrapped below the rim or groove. Draw the cord snugly and tie it. Now pull the skin down under the cord all around the pail. Be sure that the cord is tight enough to hold the skin firmly.

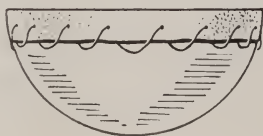
Bowl, Cocoanut Shell, or Gourd Drums

Very good drums may be made from pottery bowls, cocoanut shells, or large gourds. When cocoanut shells are used, the cocoanut meat must first be taken from the shell. Skins make the best heads for this type of drum.

The heads must be laced on drums of this type. This is done in the following manner:

Strong cord, wrapping twine, or leather thongs make the best laces. If a needle can be found with an eye large enough to allow the lace to be threaded through it, this can be used to advantage. If a large-eyed needle cannot be found small holes may be snipped or punched in the head slightly below the bowl's edge. These holes should be placed about an inch and a half or two inches apart.

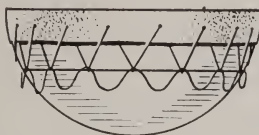
1. Run the lace through each hole. Allow plenty of slack in the lace and then tie it together. With the needle or fingers make little loops in the lace all the way around the skin, being sure that the loops are all even.



2. Now run another lace through each loop. Draw this very tightly around the bowl and tie the ends.



3. Now make another row of loops attached to the first row and pull these down until they are even.



4. Thread a lace through these loops and tie this lace tightly in the same manner as in step 2.

Continue this looping and tying until the laces can be pulled together at the bottom. When the lacing is all completed adjust the loops so that they are all even and that the skin is held smoothly and tightly.

Serviceable drum-head material may be made also of linen or silk. Stretch the cloth across the resonator and secure it as described in the previous plans. Cover the cloth with many applications of white shellac. Allow each application to dry before applying the second coat. Continue the coating until a firm, resonant head results.

Rattles

Rattles may be easily constructed by putting some buckshot or seeds into a small wooden box. It is better if the box has a lid which can be fitted on tightly. A small condensed milk can may be used by punching a hole in it and inserting the shot or seed. Covering the can with cloth or soft leather will improve the tone.

Small gourds can be made into very satisfactory rattles. After the gourd is dried a hole must be cut into the shell of the gourd so that the pulp may be removed. The pulp should be removed with a long knife blade. Then after putting in a small quantity of shot or seed the opening may then be covered with tape. A handle fitted into this hole makes the instrument easier to play.

Triangles

Each percussion band should have several triangles. An old brake rod from an automobile, which may be found in garages and junk yards, makes the best type of instrument. The rod is of steel and, though fairly easy to bend, has a resonance that other types of metal rods do not have.

Any length of rod from eighteen to thirty-six inches may be used. The rod may be bent into a triangular shape by placing it in a vise and bending with the hands. The two ends of the finished triangle should not touch each other for this impairs the free vibration of the metal. A cord or ribbon tied to the triangle makes a good handle. This handle allows the maximum amount of free vibration which gives the clear ringing tone which is desired. A large nail or small metal rod makes a good beater. Care should be taken to see that the triangle is played with a soft light beat.

Wood Block

The wood block is a piece of wood about two inches thick, two and one-half inches wide and six inches long with grooves hollowed out of the block near each side. The easiest method for making a wood block is as follows:

1. Select a block approximately the size described above. Use fir, walnut, maple, mahogany, or redwood.
2. Place the block in a vise lengthwise and with a hand-saw start as though you planned to saw away a slice of the block about three-eighths of an inch in thickness. Continue sawing until a distance of one-half inch from the opposite side has been reached. Now turn the block over and repeat the process on the other side of the block.



3. Now place a thin strip of wood (the thickness of the saw-cut and about three-eighths of an inch in width and as long as the cut) in the opening at either end of the block, glue and clamp into place and allow to stand until the glue hardens. Play by striking with a mallet.



Suggestions for Teaching the Percussion Band

1. Introduce the instruments, one section at a time, in the kindergarten or first grade. They may be used in playing the rhythms to instrumental music or may be used to enrich the interpretation of songs sung by the children. For example, the wood block or rhythm sticks are appropriate for songs illustrative of the hoof-beats of the donkey or pony, the triangles may be used in songs descriptive of bells, the sandblocks in songs about trains, and the drums in Indian, drum, or marching songs.
2. As the children progress in their response to rhythm through playing, allow one section of instruments to play on the *loud*, and another section to play on the *soft* beats of the music. Use music having both double and triple measure.
3. Adapt the playing to the individual abilities of the children. Some children in the group will play the regularity of beat, others accented and unaccented beats, and others the phrase rhythm.
4. The percussion band should probably not be continued beyond grade three. Beginning with the latter part of the third year the children should play melodic instruments. In one-teacher schools the percussion and melodic instruments may be combined in which the older children play the melody and the younger children the percussion instruments.

Melody Instruments

Water Glasses

One of the simplest "home-made" instruments upon which to play melodies are common water glasses. The tone is bell-like and the pitch readily changed by raising or lowering the water in the glass. Since the musical value of this activity is partially in the tuning and in testing ways of improving the tone, the children should be allowed to participate in all of the steps.

Tuning the Glasses

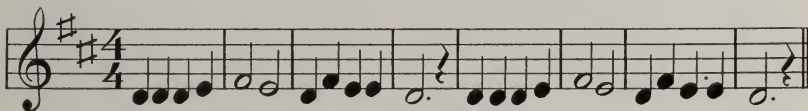
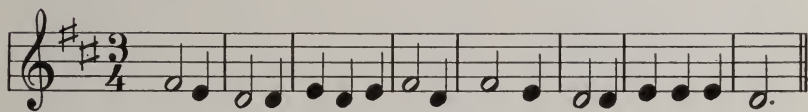
1. Select the glasses to be used by "tapping" several types and listening to the tone. Usually fairly thin, cylindrical glasses produce the best tone. Select three glasses with which to begin and which are to be tuned to the first three tones *do re mi* of the major scale.
2. Take one glass and in the presence of the children experiment with the glass by placing water in it. The children should discover that adding water lowers the pitch of the glass and removing some of the water raises the pitch. Tap the glass lightly on the side as the water is added or removed.
3. Experiment briefly with tone by standing the glass on various kinds of material such as the wooden table-top, on a blotter, a heavy cloth or felt, etc. The heavy pad or blotting paper improves the tone. Also, use a variety of small mallets for striking the glass. Use a small spool, or a wooden bead, on a short stick, or a clothespin will do. Listen carefully to the sound produced by the wooden mallet. Now, cover the mallet with cloth drawn tightly over the mallet and hold in place with a string or rubber band. The children should note that the cloth produces a more musical tone than the wood. Check also the difference in tone produced by striking the glass near the top and near the bottom.
4. Place three of the glasses in a row on the blotting pad or on the heavy cloth. The teacher may ask the children to find the lowest of the three and the highest of the three. Place the glass with the lowest pitch to the left, and the highest to the right.
5. Add water to the lowest glass. Begin by filling it one-half to two-thirds full. Now tune the third glass by adding water until the two glasses play the interval *do-mi*. After the glasses are almost in tune very little change in the amount of water will change the pitch. A spoon or large "dropper" may be used in the final steps in tuning. After glass one and glass three have been tuned, adjust the pitch of the middle glass until the tune *do re mi* can be played in tune. At first, much

patience is needed in tuning, but with experience the pitch becomes easier to hear.

6. After a series of glasses are tuned, it is a good plan to label the glasses 1, 2, 3, or *do re mi*, and mark the water level on the outside of each glass. In this way, the water may be removed after being used, and again replaced without much effort in tuning. Mark the glasses with India ink, gummed labels or with paint.

Playing the Glasses

1. After the three water glasses have been tuned, the teacher may show the children how to play a simple melody such as:



2. The melodies may be played by imitation through watching the teacher play them, or, as an aid to playing, the children may first sing the melodies to be played with numbers or syllables. If the glasses have been labeled with the syllables or numbers, the children will quickly grasp which glass is to be struck in playing the melody.
3. After a melody has been played by the children, they will ask to "write it down" in order that it may be remembered and used again. A simple way of recording these melodies for future use is to write the symbol used in singing the melody without the staff notation. The first melody suggested under number 1 above, recorded with the numbers would be:

3	3-2		1-1		2	1	2		3-1	
4	3-2		1-1		2	2	2		1-1	

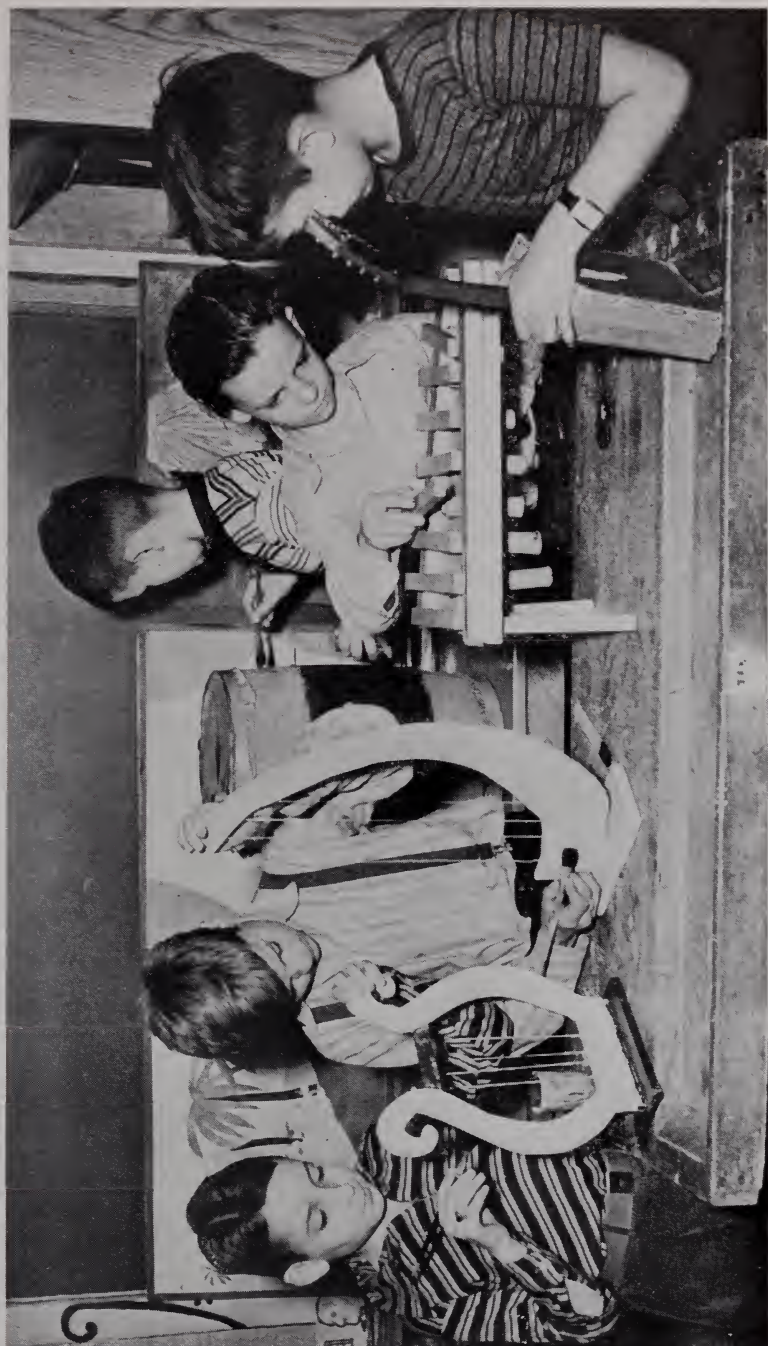
If syllables are sung instead of numbers, the song might be recorded in this way:

3 m-r | d-d | r d r | m-d |
 4 m-r | d-d | r r r | d - - ||

In the above system of "shorthand" notation, it should be noted that the dash(-) indicates that the note is held an additional beat. Rapid sounds (the equally divided beat) may be written with a circle drawn around the numbers or syllables. For example, with number notation "Hot Cross Buns" will be written:

$\frac{2}{4}$ 32 | 1- | 32 | 1- | (11)(11) | (22)(22) | 32 | 1- ||

4. After playing several familiar melodies the children will enjoy creating original melodies to play on the glasses. These melodies may be written down with the number or syllable-letter notation.
5. Several sets of three water glasses may be tuned to the same pitch. In this way the children can play duets, trios, and quartets.
6. After the children have had experience in singing and playing three-tone melodies, two additional tones may be used by adding two more glasses to the sets of three. These may be tuned to the first five tones *do re mi fa sol* of the major scale. There are many familiar melodies which can be played on the five glasses such as: "Jingle Bells", "Lullaby" by Rousseau, "The Fiddle" by Ros-siter, "Hymn of Thanks" by Beethoven, and "Lightly Row" (Folk Song).
7. Continue adding glasses to the sets and experiment with a variety of ways of tuning. The glasses may be tuned to play the:
 - a. Three and five tones already described
 - b. Eight tones of the major scale
 - c. Five or eight tones of the minor scale, *la ti do re mi*, and *la ti do re mi fa sol la*. This is an excellent way to introduce the difference between major and minor.



Children learn about music through the creation of their own musical instruments

- d. Pentatonic or "five tone" scale. This is an ancient scale made up of the tones *do re mi sol la* or *c d e g a*. Many Scotch folk songs, Negro, and Indian melodies can be played on this scale.

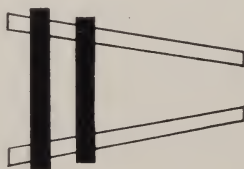
A Home-Made Marimba

Simple marimbas are easy to build and easy to play. Children, beginning with the fourth grade, who have had a little musical background can construct this instrument. The instrument may be used in playing early in the child's musical experience. In some schools the children in the upper grades make instruments for the smaller children to use. The following steps to follow are suggested in making the marimba:

1. Experiment with the tone produced by the different kinds of wood which are available in your locality. Use pieces of wood about three-fourths of an inch in thickness, one and one-half to two inches wide, and fifteen inches long. The inexpensive wood which produces a desirable tone quality is fir and redwood. Harder wood such as walnut, maple, or mahogany may be used but these woods are more difficult to work. Hold the bars lightly between the thumb and finger at a distance of approximately one-eighth of the entire length of the bar from the end. Tap lightly and listen to the tone. The children should judge which wood produces the best "singing" tone. Fir is inexpensive and is available at all lumber yards. It is probably best for the early experiments in marimba making.
2. For each marimba having five keys *do re mi fa sol* a strip of wood of the width and thickness mentioned and about six feet in length should be sufficient. The first section cut from this strip will, of necessity, need to be experimental since both the thickness and the length of the bar governs its pitch. Saw off a strip about 14 inches long and test its pitch. Hold it closely to the ear and with the aid of a piano or pitch-pipe discover the pitch of the bar. It should be near the pitch C or D. If it is desired that the finished marimba play in the key of C, this bar should then be changed to sound exactly this pitch. If the pitch of the bar is *lower* than the C,

shorten the bar by sawing off a small piece of it. It should be remembered that the *shorter* the bar the *higher* the pitch. If the pitch of the experimental strip is considerably higher than C, this bar should then be laid aside and used for one of the higher tones of the instrument and another strip cut which will be longer than the first. If the bar is only slightly higher than the pitch desired, its pitch may be *lowered* by laying the strip on the workbench or placing it in a vise and with a sharp plane remove a few shavings from the *flat* side of the wood, thus making the bar thinner. Remember, the *shorter* the bar, the higher the pitch—the *thinner* the bar the lower the pitch.

3. After the lowest key of the marimba has been tuned to the desired pitch, the next bar to be tuned may either be the next tone higher in the scale or the *highest* tone of the entire series. In the case of the five-tone marimba the highest tone will be the *sol* (or G if tuned to C). For an eight-tone marimba, it will be the octave. Tune the lowest and highest bar to pitches for *do-sol* or *do-do*, as is desired. Always cut the bar somewhat longer than is necessary and attempt to bring *up* to the desired pitch by sawing off a very short segment of the bar at a time. If care is taken, the entire process can be accomplished with a hand saw. No planing will be necessary.
4. As the bars are cut and tuned as nearly to the proper pitch as possible, place them in a row on a temporary base. This may be done by placing two narrow strips of wood on the workbench or table in the shape of a "V". The base should support the marimba bars at a point approximately one-eighth of the distance from the end of the bar.



In this manner the bars are readily struck with a mallet and the relation between the pitches thus tested by ear.

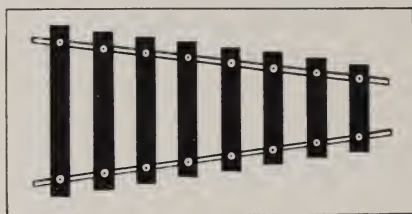
5. After the bars have been tuned they should then be mounted on a rope or a base for convenience in playing. The simplest device to use for a small marimba constructed of light material is to fasten the bars to a loop of light rope. Place the bars in order on a bench or table with an equal amount of space between each bar. An inch will be adequate. Now lay the rope on the bars in the shape of a loop and tack the rope to each bar. Secure the rope to the bar at a distance of approximately one-eighth of the length of the bar from the end. This will insure free vibration up the bar when struck with a mallet. If greater perfection is desired in securing the rope at a "dead" point, place the bar on the temporary base and sprinkle it with fine sawdust and tap the bar lightly until the dust "piles up" at a point near the end. Mark with a pencil and tack the rope at this point.



In playing, the instrument is held by the loop with the left hand in a vertical position in front of the player. The bars are struck with a mallet held in the right hand.

If an eight-tone marimba is made the "rope method" of holding the bars together is not recommended since the instrument will be too heavy to suspend with the left hand. In this case the instrument should be mounted on a base which will consist of a rectangular board large enough to accommodate all of the bars. Mark the "dead point" of the bars and nail two small strips of wood to the base in the shape of a "V" in such a position that each bar will rest on the base in such a way that the bar will vibrate freely when struck with the mallet. These raised strips should be about one-half inch wide and three-fourths to one inch high. Cover the top of the raised strip with felt, or stretch a piece

of small rope across them lengthwise. This will serve as a cushion upon which the bars may rest. After the base has been completed, place each bar in position and drill a small hole through each bar where it contacts the base. A small finishing nail driven through each hole will serve to hold the bar in position. The hole in the base must be large enough that it is not held snugly by the nail. Each bar must be "free" otherwise it will not vibrate.



6. When a group of children attempt to make marimbas which may be played together in the school orchestra, great care should be taken that all of the instruments are pitched in the same key. If this is done, it is recommended that the teacher make all of the lowest bars to be used and give one of these bars to each child at the beginning of the project with the instruction that this bar is *not to be changed*. All other bars are to be tuned to the one supplied by the teacher.
7. Mallets for playing the marimba may be made of spools, large wooden beads, or other round pieces of wood or hard rubber. The handle of the mallet should be small, a round stick the size of a lead pencil or slightly smaller will do. The handle should be ten to twelve inches in length. Cover the mallets with pieces of cloth, soft leather, or felt and experiment with the quality of tone produced by the different mallets.
8. The early steps in playing the marimba are the same as those described in playing the water glasses.

In addition to the water glasses and the marimba, a simple melodic instrument may be constructed such as pan pipes which are made of thin reeds, cigar box fiddles, harps, and the like. It is recommended that although the construction of a simple

instrument is invaluable to the children, this project should not be carried to the extent of making instruments which are highly complicated. When carried too far the task of construction may demand an unreasonable portion of the time for music.

The Psaltery

The psaltery is an ancient, harplike instrument which is played by directly plucking the strings with the thumb. The commercial psaltery is tuned to the C Major scale with strings which extend to the G below middle C and upward from this G two complete octaves. The tone quality is light and very pleasing, especially when several of the instruments are played together.

1. The psaltery must be tuned frequently. The strings are attached to "pegs" in such a way that a large key may be used in tuning the instrument. Only those teachers whose ear for pitch is adequate for tuning should attempt the use of this instrument.
2. One or two of these instruments may be used effectively in combination with the water glasses and marimba.
3. Care should be taken to produce a pleasant musical sound when playing this instrument. This is determined largely by the method used in plucking the string. When the thumb is used, the fleshy part of the thumb should contact the string rather than the thumb-nail. If a "pick" is used it should be one of moderately soft material. A small strip of hard felt glued to a very thin stick is sometimes used. Also, a paper clip or thin stick covered with a thin strip of adhesive tape will suffice.
4. The psaltery should be placed upon a desk or table with the player seated in front of the instrument for the first lessons in playing. Later on the instrument may be held by resting it in the left arm and plucking the strings with the thumb of the right hand.

Bells

The orchestra bells are almost identical with the marimba which has been described previously except that the keys of the

instrument are constructed of strips of metal instead of wood. If it is desired, several sets of bells may be combined with the other melodic instruments described in this section. Since the bells are difficult to make, it is recommended that they be purchased commercially.

Tonette, Song Flute and Recorder

There are several inexpensive instruments which are played by blowing such as the tonette, song flute, and recorder. In selecting these instruments consideration should be given to: (1) the durability of the instrument, (2) the tone quality, (3) the ease with which the instrument can be sterilized and cleaned, and (4) the shape of the instrument in relation to the child's hand.

The section of this outline on Music Reading lists the initial steps in playing these instruments in relation to the development of music reading.

Harmonica

This simple instrument may be purchased from fifty cents upward. The harmonica is easy to learn and arouses much enthusiasm. It may be effectively used in combination with other rhythm or melody instruments or in combination with other harmonicas to form a harmonica band. Care must be taken that the harmonica is pitched in the same key as the other melody instruments if they are used together.

1. The proper way to hold the harmonica is in the left hand with the low notes to the left. On the ordinary harmonica *do* is played by blowing the fourth hole from the left. The instrument should be placed well into the mouth between the teeth so that four holes are covered. Press the tongue against the *three* lower notes and blow lightly so that only the fourth hole is sounded. Be sure that only one tone is sounded. Do not proceed further until this has been mastered.
2. To play the scale, blow on the fourth hole for *do*, draw on the fourth hole for *re*. For *mi* blow on the fifth hole. Be sure that the mouth still covers four holes with the tongue covering the lower three. In producing *mi* the tongue will be covering holes 2, 3, and 4. Draw the breath on the fifth hole for *fa*. For *sol* blow the sixth—

for *la* draw on the sixth. For *ti* draw on the seventh and for *do* blow on the eighth. Beginners should practice playing a clear-cut scale before attempting any melodies. The holes above the seventh on the harmonica form a continuation of the scale and are played in the same manner as the lower octave.

3. After the student becomes quite proficient at playing melodies, a chord accompaniment may be produced by moving the tongue on and off of the lower three holes of the harmonica. Be sure in tonguing the chords that the melody note is continuously produced.
4. A vibrato effect may be used to enhance the quality of tone. This is produced by holding the instrument in the left hand between the index finger and thumb. Place the thumb of the right hand underneath the thumb of the left—close the fingers of the right hand over those of the left thereby forming a box or air chamber. The right hand may then be opened and closed rapidly to produce a good vibrato effect.

Autoharp

The autoharp is a stringed instrument much like the psaltery with the exception that it is equipped with a mechanical device for playing full chords rather than the single melody. By means of a series of bars placed horizontally across the strings, the strings are “dampened” by pressing these bars in such a way that the primary chord can be produced. The instrument is inexpensive and serves as an excellent device for giving experience in the use of the basic chords. The instrument is tuned to C major and can then be used as an accompaniment to the melody instruments described above.

Playing Part Music on Melodic Instruments

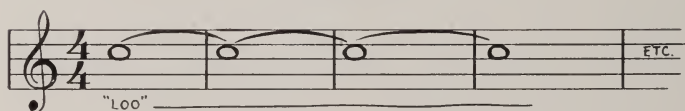
The initial steps in playing the melodic instruments have been described both in the section dealing with “Music Reading” and in the tuning and playing of water glasses presented earlier in the present section. It should be added that although the outline on music reading refers to a vocal approach, the reading problems in instrumental music are identical with those problems in vocal music. In dealing with the problems of reading,

we are primarily concerned with a *mental* rather than a *mechanical* process and what is correct *mentally* for one method of making music must be correct for the other. There is not one mental process for *playing* an equally divided beat, for example, and a different mental process for *singing* it. The development of music reading, then, in a balanced music program will provide for both the singing and playing of the elements of music which the children are studying. The teacher should be familiar with steps outlined for the development of music reading in conducting the activities in instrumental music.

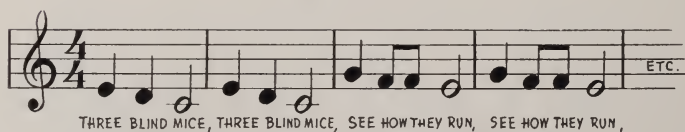
After the children can read and play simple melodies on the instruments, they will express a desire to play in parts. One of the best ways of introducing the playing of parts is through the use of descants in which a part of the group sing or play the main melody as the others play the descant. This may be used fairly early in the child's playing experience. The following steps are suggested for singing and playing with the descant:

1. Begin by having the entire class sing the melody. Use a simple, familiar tune, such as "Three Blind Mice".
2. Now show the class how the octave above, sustained at a single pitch, will harmonize with this melody. The teacher may sing the sustained tone with the neutral syllable "loo" or a small group of children may be chosen to sing it.

Descant

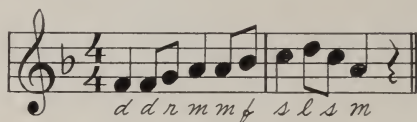


Melody

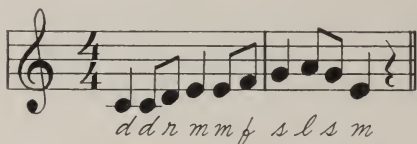


3. The sustained octave may now be played by a group of children using this tone on the tonette, song flute, harmonica, or any other instrument capable of producing a sustained tone at the proper pitch.

If the teacher can read the music by *syllable* transposition is easy. All that is necessary is to read the syllables of the song in the original key, and then write the *same syllables* in the new key. For example, the familiar song *Long, Long Ago* may appear in the key of F.



Transposed to the key of C would be:



Music Reading

The ability to properly interpret the written musical score is indispensable as a means for the continued enjoyment of music. All forms of playing, singing, or creating original music demand the ability to recognize quickly and accurately the pitch and duration sounds indicated by the notes on the staff. To develop this skill demands time and painstaking effort, but when the learning steps are carefully planned and skillfully applied by the teacher, it can become an enthusiastic learning experience for children.

Readiness for Music Reading

It is known that success in the reading of written language depends upon many factors of child growth and development. In order to succeed in the reading of language, the child must have reached a given mental age. He must have reached a certain point of physical and emotional development and must have an adequate background of real experiences with which to insure the bringing of meaning to the symbols which he sees on the printed page.

Although what constitutes adequate readiness for the reading of printed musical symbols has not been determined in detail, it is safe to assume that the problem of readiness in music is as important as it is in the reading of language. Printed symbols

(staff notation) in music, to be meaningful must be preceded by the actual musical experience for which the notes stand. It is likely that many of the mechanical methods used in teaching children to read music, which have resulted in a note by note "spelling out" of the tune, have been brought about as a result of introducing children to written notation before adequate readiness has been established.

To treat the problem of readiness for music reading comprehensively will eventually entail a series of detailed studies. At present, it will suffice to state roughly the major aspects of the readiness program.

1. The child should have reached a state of organic maturity essential to success in mastering the musical score. At the present time, there are no measures of maturation for this purpose. The teacher should be aware of the probability, however, that the early frustrations in the attempt to read music may be the result of immaturity.
2. Prior to being introduced to the reading of musical notation, the child should have an abundance of pleasant experiences with music through listening, singing, playing melodies on simple instruments, and expressing himself rhythmically.
3. The child should have musical experiences through performing music and listening which develop a familiarity with a variety of tonal media used in the making of music. He should experience music through the voice, by playing on metal bars, wooden bars, strings, by blowing, etc.
4. Through the performance of melody he should learn (a) when a melody ascends and descends, (b) the difference between high and low tones, (c) when it moves step-wise and when it moves skip-wise, (d) a concept of "home-tone" or tonic, and (e) the ability to recognize repeated and contrasting units within the melody.
5. Through listening to music he should learn to make broad discriminations such as the difference between the voice of a man and a woman; he should be able to recognize common instruments by "ear" such as the piano, violin, cornet, drums, and flute; he should recognize character-

istic moods in music such as quietness, brightness, lullaby, march, skip, etc., and should be able to recognize sounds familiar to him such as animals, wind, water, clocks, insects, and the like.

6. He should respond accurately to the major aspects of rhythm in music. This entails a response to regularity of beat—fast, moderate and slow, accented and unaccented beats, and the musical phrase and cadence.
7. He should learn to sing many songs accurately and independently.
8. He should develop an aural connection between pitch combinations and syllable names or numbers prior to the introduction of staff notation.
9. He should develop an interest in reading music through handling interesting music books, and by watching others use music books for playing and singing.

Building the Vocabulary with Which to Read Music

The accurate and successful reading of musical notation demands a reading vocabulary in much the same manner that the reading of words and sentences demands an association of spoken words with ideas or objects. In language reading it is generally accepted that we deal with a three-link chain of association. The first link of this chain is the *object* or *idea*, the second like the *spoken name* which is assigned to the object or idea, and the third link, the written or *printed name*. It goes without saying that if material read (the printed symbol) is to be meaningful to the learner he must have previously associated the spoken word with its real object or idea.

The structure of the musical language is identical with that of the spoken language. The first link of the chain in the musical language refers to the music itself. To be concrete, we may call each tone of the scale a separate musical *object*. For accurate reading, we must associate a separate spoken word with this object. When we finally make firm the connection between the *sound* and its *spoken name* we can move on to the third link of the chain, the *printed note* on the staff.

It is often urged by teachers that the middle link of this associative chain is unnecessary in music, that the child can be

taught to read accurately by associating directly the pitch-sound with the written note. This argument would hold, and this method of teaching follow, if it were true that all combinations of printed notes which have a certain appearance on the staff always sounded the same. Unfortunately, this is not the case. Take for example, a step-wise line, space, line, space progression. Notes may appear in this fashion in one key, and again *in the same way* in a different key. They look alike but differ greatly in the way they sound in combination. The only solution to this problem is to devise a system of reading which reduces the essential associations to be made to elements which remain relatively constant. If a child looks at a melodic pattern on the staff and recognizes it as "do, mi, sol" or "one, three, five" and has *previously* associated these names with a definite relationship of sounds, the notes will have a meaning to him in terms of music.

It should be evident from the foregoing discussion that a reading vocabulary should be established *aurally* prior to the presentation of written notation. This instructional job is merely one of helping the children make the proper association between pitch-sound combinations and their syllable names or numbers, whichever the teacher chooses to use. This association can be made only at the outset through a process of imitation. Some classroom methods used for this purpose are outlined below.

Pitch Groups

This method advocates the teaching of sound-syllable combinations by selecting simple pitch combinations which are found in much musical material. These patterns are then sung by the teacher, with the syllables as numbers, for the children to imitate. Some simple patterns to be used in this manner could include:

do ti la ti do

do sol do

do sol la ti do

do ti la sol do

do ti re do

do sol la sol do

do sol mi do

do re mi re do

do re mi fa mi re do

do mi sol mi do

do re mi fa sol

sol fa mi re do

do mi sol la sol mi do

do la fa la do

do la fa re do

It should be noted that the pitch figures suggested above follow simple scale-line and chord-line progressions. They also emphasize the key-tone (tonality) by ending on the tonic *do*, and either begin on the tonic or dominant *sol* tone.

The thorough teacher, in building a developmental reading program, will decide in advance upon the eight or ten songs which the children will first read and use the pitch-figures which appear in these songs as the basic material for building the reading vocabulary.

Pitch Figures in Familiar Songs

Another plan for establishing an aural vocabulary with which to read is to isolate short figures found in the songs which the children have already learned as rote songs: for example, the tune to "cherries are ripe" (*sol mi do re*), in the song by the same title; the "whip-poor-will" figure (*mi sol do*), in the well-known "Whip-Poor-Will" song, etc. Each rote song which the children learn for enjoyment will have a figure or two which may be sung with syllables. In this method, as with the pitch groups, the proper syllables which accompany the selected pitch figure must be taught by rote. In short, this method is identical with the "pitch group" method described above with the exception that in the latter the children are already familiar with the tune to which the syllables are added.

Syllables as a Second Verse to a Familiar Song

This method is merely learning to sing the syllables, by rote, as a second verse to a song that is already familiar to the children. Some teachers of music advocate the teaching of a dozen or so simple scale and chord-line songs in the first grade which may later be used as "work" songs by the second grade. In this case, the first "work" step taken by the second grade is the learning of the syllables as a second verse. If, however, the children in grade one learn to sing these simple songs correctly in tune there is no reason why they should not learn the "music words" immediately following.

Sequentials

It has been suggested by some teachers of music that the easiest and most economical way to learn the connection between

pitch-sounds and syllable names is to *memorize* a sequence which includes all possible combinations of a given pitch problem. For example, since many progressions in songs move step-wise, the best way to aurally prepare for these problems is to sing by rote a sequence descending *do ti do, do ti la ti do, do ti fa sol la ti do*, etc. to lower *do*. Then ascending in like manner: *do re do, do re mi re do, do re mi fa mi re do*, etc. Other pitch problems are treated in like manner with the appropriate sequential exercises. Skips of a third, alternating, would be made automatic through singing *do la, ti sol, la fa, sol mi, fa re, mi do, re ti, do*. Ascending: *do mi, re fa, mi sol, fa la, sol ti, la do, ti re, do*. However, it is advised here, that instead of teaching sequential exercises early in the child's experience with syllables, to delay their use until the child recognizes the need for a fluent connection between pitch sounds and syllable names.

Associating Syllables or Numbers with Simple Tunes Played on Simple Instruments

For small children begin by tuning water glasses to the first three tones of the scale. Teach the children, by rote, a simple three-tone melody such as "Hot Cross Buns". Play it for them on the glasses. Now suggest to them that if we *name* or *number* the glasses it will be easier for them to learn which glass to tap in playing the song. (*do, re, mi*, or 1, 2, 3 may be written on the glasses with ink or printed on tape and pasted on.) Play a short phrase asking the children to watch which glasses you strike. Ask them to sing it back with the syllables or numbers (depending upon which you use). When a child can sing it correctly with syllables or numbers, allow him to play it. After the relation between pitch and syllable names has been well established the children may play a guessing game by having someone play a short tune on the glasses and asking the children to tell (by ear) which glasses were struck. This will insure a permanent connection between sound combinations and syllables. After the three-tone melodies have been exhausted, add two more glasses and play five tone melodies in a like manner.

The marimba, psaltery, or any other simple instrument may be used in place of, or along with the glasses, provided they are tuned to the same key.

Ways Which Combine the Testing of the Association of Sounds and Syllable Names, and Ways of Making This Connection Rapid and Automatic

After syllables or numbers have been presented, by imitation, there remains the task of testing to determine whether or not the connection has been established in the learner's mind. The tests used for this purpose should also give additional experience in fixing this connection in the mind. The following are some classroom devices suggested for this purpose.

Calling Syllables

This test is simply giving to the learner, orally, the syllable names to combinations which he has previously learned. He responds by repeating the syllables named with the proper pitch relations which go with these syllables. For example, if he has sung simple pitch groups by rote the teacher says, "Can you remember today the tune which goes with these syllables?" Give the pitch and *say* to the class: "Sing *do re mi re do, do re mi fa sol,*" etc. In like manner the figures from familiar songs may be used. Suppose you have taught by rote the syllables to "Whip-Poor-Will" or "Mary Lou" which appear in these songs. You may then say to the class: "Sing *mi sol do.* Do you remember whose tune it is? Who can sing it the way it goes in the song?" (Child repeats using the words *Mary Lou.*)

Also, if the children have learned to associate syllables with simple scale-line and chord-line passages they have played on simple instruments, the teacher may say, "Can you play *do sol do*? If you'll think how it sounds before you play it, you can tell whether or not you do it correctly."

Aural Pitch Recognition

This testing and learning procedure is much the same, in principle, as *calling syllables*. The only change being that in this device the teacher presents the melody alone, and the children supply the proper syllable names.

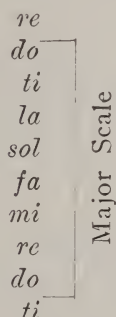
1. Sing with a neutral syllable such as "loo" the various pitch groups the children have learned. Ask them to repeat the tune using the proper syllables or numbers that they have learned to associate with it. In like manner, these melodies may be played on the piano, marimba,

tonette, psaltery, or any other melodic instrument which is available.

2. Select some phrases or figures from the songs of which the children have learned the syllables as a second verse (see foregoing section). Sing or play these phrases with a neutral tone and ask the children to recall the syllable names which they have sung to these phrases.

The Musical Ladder

Write on the blackboard or make a permanent chart which shows the vertical relationship of the syllables (or numbers) like this:



With a pointer indicate pitch combinations with the children singing as you point. For example, sound the pitch for the class and point *do ti la ti do*—the children following the pointer by singing. This device is helpful in that it shows the relation of tones somewhat as they appear in musical notation on the staff. They will see, for example, that *do re mi* is an ascending progression, *do ti la* is descending, *la* is directly above *sol*, etc.

Neighboring Tones

After a little preliminary work with the "ladder" the children should be able to recall rapidly various tone relationships. The simplest of these are the tones which occur next to each other in the scale. The children often think of them as the upper and lower "neighbors". After singing syllables with the use of the ladder say to the children, "What is the upper neighbor of *la*?" (*sol*) "The upper neighbor of *re*?" (*mi*) "Can you remember them without looking at the ladder? Let's try it this way: I shall sing a syllable—it may be *mi*, *fa*, *sol*, or *re*—

you repeat the syllable I sing for you, then the one above it, and back down to the first one again. If I sing *mi*, you will sing *mi fa mi*." Proceed in the same way with the *lower* neighbor.

Modulation

If the perception of tone relationship has been well established it should be possible for the learner to "change keys" rapidly and with ease. This is an excellent test of the association of sound and syllable. The simplest and most common modulation is to the *dominant*. Begin by asking the class to sing a series of pitch groups such as *do re mi re do*, *do mi sol*, *sol fa mi re do*, etc. Sing a progression ending on *sol*, the fifth tone of the scale. Sing the tone *sol* several times in order to fix it in mind. Now call *sol* the syllable *do*. Continue with a series of pitch group with *do* established on the new pitch. Modulation to the sub-dominant may also be used. Proceed exactly as in modulation to the dominant except to use the sub-dominant tone *fa* upon which to establish the new key.

Prerequisites for Reading of Musical Notation

As a preparation for the initial reading of music from the staff the children should:

1. Have a rich and varied experience in singing many songs by rote.
2. Have had frequent experience in hearing music played and sung by others.
3. Be able to sing a melody correctly in tune.
4. Have a well-developed response to the major aspects of rhythm. (See Rhythmic Program.)
5. Preferably have had experience in making music with several sound-producing media such as the playing of simple melodies on a psaltery (stringed instrument), marimba (wood), bells (metal), tonette or song-flute (wind), etc.
6. Be able to recognize like and unlike parts within a melody.
7. Be able to distinguish between sounds of long and short duration.

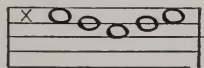
8. Be able to recognize by ear, *high* and *low* tones.
9. Be able to recognize step-wise and skip-wise progressions in a melody.
10. Have a vocabulary with which to interpret the meaning of pitch-relations as presented by notes on the staff. If syllables are used, the aural connection between sound and syllable should be established before printed notes are introduced.

Ways of Introducing the Reading of Staff Notation

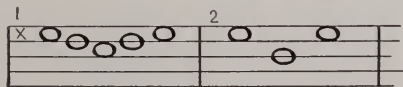
Presenting Pitch and Duration Separately and Then in Combination

This method has been in use for many years. Although it is not strictly in keeping with recent psychology it is still widely used in American schools, and has many aspects of merit in the hands of an able teacher. The steps are as follows:
Pitch

1. Prior to presenting the staff notation teach the relation of sounds and syllables by teaching a series of pitch groups by rote. (See foregoing section.) Make certain that the associations have been well established before the printed notes are introduced.
2. By means of a staff-liner place a blank staff on the black-board and indicate "*do*" with a check mark. (Use 5th line or 4th space, as desired.)
3. Ask the class to sing a syllable group such as *do ti la ti do*.
4. "Now sing it again—slowly this time and watch. I'll write it while you sing."

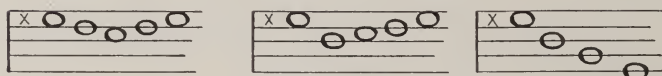


5. "Sing *do sol do*—again slowly as I write it."



6. Progress in like manner until six or eight simple pitch combinations have been sung and placed on the staff.

7. After a series of pitch groups have been placed on the blackboard in the manner described above, number each group 1, 2, 3, 4, etc. Tell the class to sing number one, number four, etc.
8. Test further the associations by singing one of the groups (using the syllable names) and call on individuals in the class to find the group you have sung.
9. Sing one of the pitch group which is on the blackboard using a neutral syllable. Ask the class to find it. Ask them to sing it with the proper names.
10. After a series of combinations have been presented begin with a new blank staff. Write a pitch group as the class watches. Ask them to sing it immediately after you have written it.
11. Place the pitch groups you have presented to the children on flash cards to be used as a rapid drill in pitch recognition. These cards should be large enough to be easily seen from all parts of the room. The following are samples.



These cards are then used in the same manner as flash cards in learning number combinations. (Materials for the construction of music charts and flash cards are available at music publishing houses, or may be "home made" with cardboard and crayola.)

12. Soon after the children have learned to recognize and sing simple pitch combinations written on charts or on the blackboard they should begin to write them on the blank staff. Use either the staff on the blackboard or music paper. If music paper is used it should be a "home made" variety with a staff large enough to accommodate large notes. Most commercial music paper uses a staff too small for little children. The staff should be five lines equal-spaced with not less than seven-eighths of an inch from the top to the bottom line. This can be readily made with a mimeograph stencil and inexpensive paper.

13. Care should be taken to avoid using *do* in the same key position too long. Since the *movable do* plan emphasizes *syllable relationship* rather than a *fixed* position it should be changed frequently. Probably the most practical plan is to present twelve or fifteen syllable combinations *in a given position*, allow the children to work with these until they recognize them readily, then, parallel to the work with pitch, a few simple duration patterns should be taught. These are then combined in the reading of several simple songs with *do* in the location used in the reading of the pitch groups.

Duration

According to the plan described here, duration (note values in rhythm) is not taught in connection with pitch as it appears in a melody, but instead, as an isolated element running parallel to the study of pitch. That is, the daily time given to the preparatory work in reading will be divided between the learning of pitch and the learning of duration.

1. Sing a simple rhythmic phrase of four measures for the class. Use the syllable "loo" or "tah" and sing it on a single pitch. For example, this:



2. Ask the class to repeat it after you.
3. Write it on the blackboard. Point to the notes as the class sings it.
4. Ask them what difference they noticed in the notes. They will soon discover that the "solid" notes (with stems) get one beat and the "hollow" note, two beats.
5. Next, erase the two quarter notes in the second measure. Ask the class what *one* note could be used to take the place of the *two notes* you have erased. Let them try to sing it. If they fail to do it correctly, sing it for them. Do the same with the third measure. Rearrange until several combinations of two quarter notes and the half note have been sung in two-four measure.
6. In the same manner, sing a simple combination of sound durations in three-four measure. For example, this



7. Write it on the blackboard, as before and erase combinations of the quarter notes and substitute the half and dotted-half notes for them. This method of *substituting* one combination of notes for another will insure an understanding of the relation of note values.
8. After a few combinations have been presented it is usually desirable to test informally in order to discover the extent to which the children can recognize the duration combination which they have sung. Begin by writing a four-measure phrase on the blackboard and leave one measure (preferably the second measure) blank, such as:



Tell the class that you are going to sing it as written but will sing various note patterns in the second measure. Choose members of the class to "fill in" the missing measure with the notes you sang. When they become expert at recognizing one measure from dictation, leave both the second and third measures blank to be filled in. Finally they will write an entire four-measure phrase as dictated by the teacher.

9. Following the plan outlined above, the class will soon read all reasonable combinations of quarter, half, dotted-half, and whole notes in two-four, three-four, and four-four measures. (Refer to any good beginning music book for the arrangements of these note values in actual song material. This will give you a clue concerning the arrangements to emphasize.)
10. After several combinations of note values have been presented there will be need for rapid drill on the combination taught. Place a series of rhythmic measures on the blackboard, establish a tempo for the class, and ask the class to sing each measure as you point. This "block rhythm" device is especially helpful in developing an automatic recognition of duration figures.



Pitch and Duration Combined

Following the brief introduction to reading simple pitch and duration described above, the children should be able to combine the reading of pitch and duration in the form of a simple melody. It is probably best to present several simple melodies on the blackboard or on charts before books are introduced. Chart or blackboard melodies such as the following examples present both pitch and duration elements which are already familiar. The one new problem is to read the *tune* in conjunction with its proper *time*.



Other melodies of comparable difficulty can readily be constructed by the teacher or obtained from school music text books. Simple melodies with words may also be used. In reading the new song the class should read the melody with syllables first, then sing it with the neutral syllable "loo", then with the words.

The Song Approach to Music Reading

This approach is fundamentally the same as the use of sentences in teaching the reading of language. The teacher who has a thorough understanding of the modern technics in teaching reading should have little difficulty in applying parallel technics to the teaching of music reading. There are a variety of

plans, and specific classroom technics for the use of the whole song in introducing reading. This outline will not attempt to survey all of them. It will suggest only a few aspects of the many plans in common use.

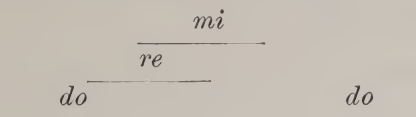
Reading Through the Use of Short Melodic Figures Which Appear in Familiar Songs

1. First Stage: Associating sounds with syllables.

- a. Select several short yet musically interesting songs which contain simple melodic figures which will also be found in other songs the children will read. These figures are usually short scale and chord-line passages such as *sol mi*, *sol la sol*, *do re mi do*, *do sol mi do*, *mi sol do*, *do ti do*, and the like. No fetish need be made of which figure or figures should be introduced first. However, the teacher should plan the approach well in advance in order to make certain that the figures introduced in the familiar song will appear in the unfamiliar songs available for use. (Some recent beginning books in music provide the teacher with an analysis of the figures which appear in the material of the book.)
- b. After a song has been selected which contains a common melodic figure to be used in reading, the song is taught (with words) as a rote song.
- c. After the song has been learned and enjoyed as a song by the class, they are ready to begin the first work with its most obvious melodic figures. The teacher may say, "Who can remember today one of the tunes the fiddle sings in the 'Fiddle Song'?" (A child volunteers by humming the *do re mi do*, or the *do do*.) The teacher: "Hum it again while I draw a picture of it on the blackboard, thus:

Lead the children to discover that the first three tones *go up stepwise*, and that the first and last tones are *on the same level* since they begin and end the same. This observation will carry over directly to notation on the staff.

The teacher: "Do you know that in learning to read music we must learn *music words* to these tunes? I'm going to sing the *music words* (syllables) for you. Notice what queer words they are?" (Sing *do re mi do*.) "Now you sing them. Perhaps we can remember them better if I write them on our picture for you."



- d. Proceed in the same manner until four or five figures have been learned, each time taken from a song the children have learned by rote. After the teacher has shown the class how to draw pitch pictures individuals will volunteer to draw others for the class. However, since the relation of pitch sounds and their proper syllable names is unfamiliar to the child *the syllables to each new pattern must be taught by imitation, the teacher first singing it for the class.*
- e. After the five or six pitch figures have been presented, they should be reviewed in a variety of ways, such as:
 - (1) Sing with a neutral tone, or play on the piano one of the short melodies, "Whose tune is it? Can you sing it with the music names we learned for it?"
 - (2) Name orally (without the melody) the syllables to the tunes learned. Ask the class to sing the tune that goes with the syllables you name.
 - (3) Rearrange the order of the syllables learned. Test to determine whether the children have associated the *specific tone* which is associated with each syllable name. If, for example, they have learned *sol mi do* as a pattern, ask them to sing it "upside down" (*do mi sol*).

2. Second Stage: Observation of staff notation—the association of syllable names with notes on the staff.

Through the use of melodic figures and pitch pictures, the children will have developed a concept of tone direction, and will have associated syllable names with their proper pitch sounds. The next step is to learn to recognize at sight these patterns when they are seen on the staff.

- a. Place one of the familiar songs on the blackboard in which one of the figures studied appears. Sing the song with the words, the teacher moving a pointer, phrasewise under the notes as the children sing. This will aid in developing proper eye-movement.
- b. “Does anyone remember which of our picture-tunes is in this song?” (Someone sings, with syllables, the figure they have previously learned.) “The notes for this tune look very much like the picture we made of it with the lines on the blackboard. Who can find it? Frame it with your hands.” Follow the locating of the figure in the song with a careful analysis of the way in which the notes are represented on the staff. If, for example, the figure moves scale-wise, the children should discover that the notes go line, space, line, space, without skipping any lines or spaces. If, in the song used, the *do* is on a line, ask them how they think the tune would look if *do* started on a space. If the progression employs the members of a chord, it should be noted that the notes are all on lines or on spaces as the case happens to be. If both a high and a low *do* appears in the figure, the class should note that the high and low *do* are opposite. That is, high *do* is on a line, low *do* on a space. The resourceful teacher will select, in each case, the pertinent aspects of the figure which it is essential for the children to discover through their directed observation. Keep constantly in mind that the essential generalizations growing out of this observation should be *the characteristics of the figure*

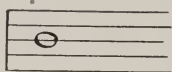
which are common to all other music which will be encountered in subsequent reading material.

- c. Likewise, the duration (length of notes) should be observed. After the teacher has "phrased" the melody through, pointing as the class sings, the melody should be sung again, the teacher pointing to each note, rhythmically indicating one "tap" for the quarter note, two "taps" for the half note, etc. The children will readily grasp the idea that the *solid* note with the stem gets one "tap", the *hollow* note with stem, two "taps", etc. As has been indicated in the previous plan, only notes of regular duration should be presented at this time; i.e., the quarter notes and its multiples (half, dotted-half, and whole) in two-four, three-four, and four-four measure.
 - d. If music books are available, these should now be placed in the hands of the children, and used in somewhat the same way that the chart or black-board songs have been used. That is, give the class experience in transferring from the recognition of the larger print to a recognition of the smaller notation which appears in the book.
 - e. Place the melodic figures studied on flash cards. Give brief and rapid drill in the recognition of the pitch combinations which have been introduced.
3. Third Stage: The recognition of familiar pitch and duration patterns in unfamiliar music.
 - a. Present to the class a simple song employing a melodic figure which has already been studied. Write the song on the blackboard or supply the children with books in which the song appears. Tell them that this is a new song but that it has some facts in it which they have seen before. Ask them to find the familiar tunes. Have them "frame" with their hands the familiar tunes and read them with the syllables. As soon as the known facts of the song have been read teach the remainder of the

song, with syllables, by rote. The class may then sing the song with the words.

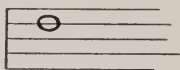
- b. In conjunction with learning to recognize familiar patterns in unfamiliar songs, the children should learn to write, on the staff, these combinations in many keys. Some teaching suggestions are as follows:

- (1) Place a blank staff on the blackboard without clef sign, key or measure signatures. Place a note on the staff, and above the note write the *syllable name* you wish to assign to the note, as:



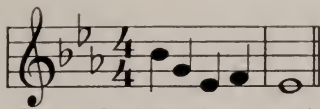
Say to the class, "If this note is *sol*, who could write the *mi do* to go with it?"

"Now let's place *sol* here. Who could write *mi do* to go with it?"



Continue in this way until all the patterns the class has used have been written in a variety of staff positions.

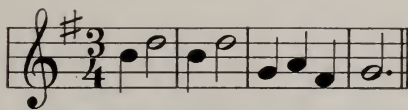
- (2) Place a blank staff on the blackboard. Sing various pitch patterns and ask the class to first *recognize the pattern by syllable*, and then write it on the staff in any position you indicate. That is, if the class recognizes the tune as *sol fa mi re do*, you may say: "Write it. The *sol* will be on the *third space* this time."
- (3) Improvise very simple melodies, pitch and duration combined. The class will readily write from dictation the pitch and duration elements with which they are acquainted. A tune like this, for example:



Good Morn-ing to you!

The teacher may sing the above melody. The class may repeat it, and then attempt to recall the syllable names that go with it. Since no preparation, at this time, has been made for the understanding of the key signature, the teacher will need to say: "The starting note is here." (Place the first note on the staff for the class.)

- (4) Very soon the children will create short tunes for themselves through re-arranging pitch figures which they have previously learned. In order to limit the selection of tunes which come to the children's minds, you might begin by saying: "Here are three of the tunes we have learned." (Sing *mi sol*; then, *mi sol do*; then, *do re ti do*.) "I wonder how we could use some of these tunes in making a song for these words."



White sheep, white sheep, on a blue hill

After a fairly wide variety of syllable combinations have been taught and used in the manner described above, the children will discover the principles of sound relationships, and note relationships in such a way that they will soon begin to read unfamiliar combinations of notes in print which have not been previously taught by rote. The teacher should not expect to teach all possible pitch combinations as figures to be studied. As soon as the children learn that *do re mi sol la*, etc. bear an unchanging relationship to each other both in sound and sight, the reading of music will become a simple matter.

As a consummation of the introductory period, wide experience must be given in the reading of songs which employ simple duration patterns (arrangements of the quarter, half, dotted-

half, and whole notes in two-four, three-four, and four-four measures) and all combinations of scale and chord-line progressions, in major keys.

Teaching Beginning Music Reading Through Playing Simple Instruments.

The mental process in reading music through playing should not differ from reading music vocally. There is seemingly much confusion in this matter at the present time. Since it is possible to somewhat accurately reproduce on an instrument the tones for which the notes stand, by a process of pressing keys, it often appears that the performer is *reading* when, in reality, he is not. Reproducing pitch-sounds by pressing keys is no more reading than the proper phonetic sounding of the words of a sentence when the reader has no understanding of what the words mean. In music reading, then, as in the reading of language, it is possible to "sound out" words and tones without a comprehension of the *meaning* of which the notes or words are symbols.

In the genuine reading of music the notes on the printed staff should always mentally indicate to the reader the proper sounds which go with them. In other words, the skill of reading is a *mental process* in which the learner is ultimately able to look at a sequence of notes and *image* the sound mentally before he presses the keys or reproduces the sounds with the voice.

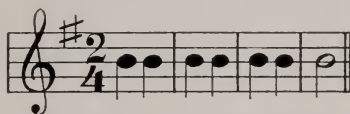
Needless to say, the commonly accepted teaching approach for instrumental playing is largely based upon a process of looking at the note and pressing the key which the teacher has previously indicated is to be used. Through this process, some individuals finally grasp what sounds are associated with given note patterns. They learn this, not because the teacher has planned that such association should take place, but because the learner has a sufficiently keen musical mind with which to learn in spite of the teacher's method. Since there has been practically no experimentation on this problem, the following outline is crude and incomplete. The details of method remain to be worked out by instrumental teachers.

1. First stage: Introducing three new tones.

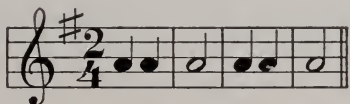
- a. Begin by showing how a given single tone is played on the instrument—in the case of tonette or song flute, for example, the stopping of the top key with

the first finger of the left hand. Ask the class to sound this pitch. Practice briefly until it is fairly well in tune. This sounds the pitch "b", third line of the treble staff. (Sounding a key by striking this note on the marimba, or bells may be done in the same way.)

- b. Place a series of notes on the staff which use this tone. For example:

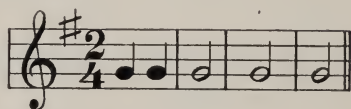


- (1) Play it for the class. (Point as you play.)
 - (2) Have the class play it. (Again point.)
 - (3) Observe the duration of the "one beat note" and the "two beat note". Erase the two-quarter notes in the second measure and replace them with the half note. Have the class play it again with the duration change.
 - (4) Now sing it with the syllable *mi* to the same pitch played on the instrument. *Mi* is the correct syllable for "b" in the key of G. *Do not omit this step.*
- c. Stop the top two keys of the instrument using the first and second fingers of the left hand. Blow the "a" until it sounds in tune.
- d. Place a four-measure pattern on the board, using the new pitch.

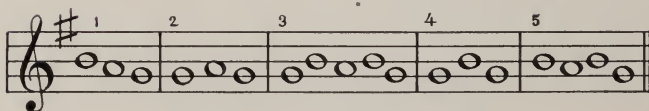


- (1) Play it. This time the class will play without the teacher's help.
- (2) Call it *re*. Class sing it with this syllable using the new pitch.

- e. Stop the top three keys with three fingers of the left hand. Blow the "g" until it sounds in tune.
- f. Place a four-measure pattern on the board, using the new pitch.



- (1) Class play it.
 - (2) Call it *do*. Class sing it with this syllable using the new pitch.
2. Second stage: Establishing an automatic connection between note, fingerings, pitch, and syllable names.
- a. Check and briefly drill the connection between sound and syllable name by:
 - (1) Calling syllables. Using combinations of the *do re* and *mi*, which have been presented above, proceed by *saying* to the class, "Sing *mi, re, do, do mi do, do re mi re do, do re do, mi re mi*, and all other combinations.
 - (2) Aural Pitch Recognition. Play pitch combinations on the instrument. Ask the class to sing them back by syllable. Play any combination using the tones "g" "a" and "b".
 - b. Place a blank staff on the blackboard. Write many pitch patterns for the class to both *read* and *play*. Always sing it first with syllables, then play it.



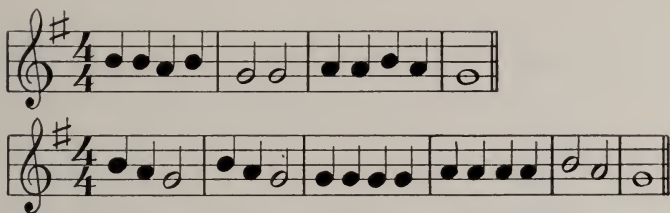
- c. Number the pitch combinations placed on the staff. Play one and ask the class to find it. Class repeat it using the syllables.
- d. Play or sing pitch combinations using the three tones learned. Ask the children to write the combinations on music paper or the blackboard staff.

- e. Review briefly the duration patterns which have been introduced up to this point.

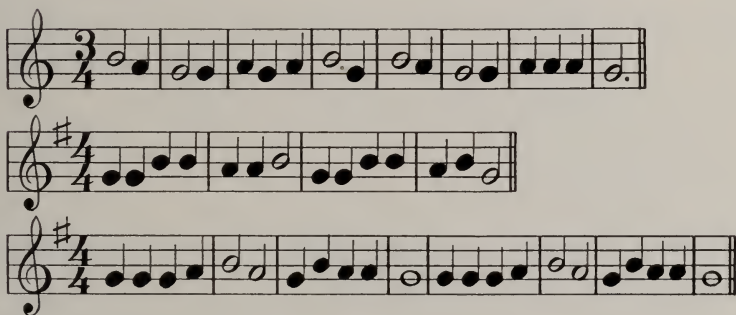
3. Third Stage: Reading and playing simple melodies—Pitch and duration combined.

With the background established through the procedure outlined above, the children now will be prepared to read at sight simple three-tone melodies. These melodies should be sung with syllables, prior to playing them on the instrument.

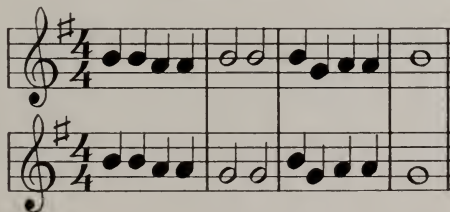
- a. Melodies to read and play:



Hot cross buns, Hot cross buns, One a penny, Two a penny, Hot cross buns.



Part Song



- b. These melodies or short figures from them may also be used for further work in music writing.

The teacher should play them on the instrument, the class writing them on the staff. As a preparation for further experience with new keys, they may be written with *do* in several positions on the staff. During this initial period, the teacher places the key signature and indicates the position of *do*, the key tone.

- c. The children should be given an opportunity to create and notate original melodies using the three tones with which they are familiar.
4. Fourth stage: Introduction of a new note.
- a. Introduce the playing of a tone above or below the three tones already learned. Either the "c" or "f" *sharp*. As was done with the first notes presented, play it in a short rhythmic exercise.
 - b. Sing the new tone using its proper syllable name. From this point on, follow the procedures for the new tone outlined in the plan above. That is, establish firmly in mind the syllable name which is associated with the tone, perfect the fingering of it, read it from the staff in combination with the three familiar tones and play it in a melody.

Published materials for further singing and playing will be suggested elsewhere.

Elements of Musical Theory and Notation to Be Taught During the Introductory Reading Stage

Although the chief aim of the initial period of reading is the development of skill in translating simple musical notation into sound, there are simple facts of musical notation which can be readily taught incidental to the task of learning to read. Such phases of music as the meaning of staff, scale, clef, measure bars, and the like may be taught provided such learning does not detract excessively from the job of reading. The following list includes, somewhat in sequential order, the symbols to be learned in this manner.

1. Staff. The children note that it has five lines and four spaces.

2. Measure bar. Both single and double bar. The single bar indicates where the accented beat falls.
3. Lines and spaces. How to locate lines and spaces by number, not by letter name. Lines and spaces are numbered from the bottom upward.
4. Note. The signs which are placed on the staff for indicating pitch and rhythm.
5. Clef. When the clef sign is used the children should be told that it is the *treble* or G clef.
6. Note values. The name of the quarter, half, dotted-half and whole note.
7. Measure signature. The meaning of the upper number of the measure signature.
8. Measure. How to find the first, second, third, etc., measures of a song.
9. Major scale. That *do ti la sol fa mi re do* is called the major scale.
10. Major tonic chord. That *do mi sol do* is called the major tonic chord.
11. Pitch. The highness and lowness of tones that we sing or play.

Pitch, Duration, Writing, and Musical Theory Problems to Be Taught Following the Initial Reading Period

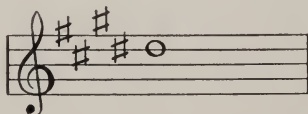
Introducing children to the reading of simple musical notation is the most difficult problem in the teaching of music reading with which the teacher is confronted. After the common rhythmic and pitch patterns outlined above have been mastered and read in an abundance of musical materials, there remains the gradual addition of a few new duration and pitch problems, each of which when learned will open up an ever widening field of music upon which to draw for use in the classroom.

The following list of problems attempts to show: (1) what skills and knowledge should be taught, (2) the order in which they should be taught, and (3) general suggestions for teaching.

Locating *Do* From the Last Sharp and the Last Flat

During the early period of reading, the teacher indicates the staff degree upon which the key note is located. The reason for the delay in the teaching of this skill is that the major portion of the child's attention should be directed toward the translation of pitch and rhythm symbols into their correct sounds. When simple melodies can be read quickly and accurately in several key positions and when the child can locate quickly the relation of one note to another on the staff, he is ready to be taught the location of *do* from the key signature. The following are suggested steps for teaching:

1. Give a brief preparatory drill in locating one note (by syllable) in relation to another. For example, place a note on the staff—tell the class the note is *sol*. "Who can find low *do* quickly?" Do this with several notes until it is certain that all of the children can figure rapidly from one note to another by syllable.
2. Teach the class how to locate the last sharp in the signature. This is often confusing to the child. It will be made clear if the teacher will place a staff on the blackboard and ask the children to count the sharps as they are placed on the lines and spaces. Place them slowly. Class counting "one", "two", "three", "four", as the teacher locates them in order. At first go no further than from one to four sharps since most reading material which the children encounter will be in keys represented by one to four sharps or flats.
3. After the sharps have been placed, call on a child to point to the last one. Ask the class upon which line or space the last sharp is placed. (In four sharps, it will be the fourth line.)
4. Place a note on the fourth line. Thus:



Tell the class, "The name of the *note* where the last sharp is placed is always *ti*.¹ If this note is *ti*, who can

¹It is a common error for the teacher to tell the class that the last sharp is *ti*. This is an example of careless usage of instructional language. The last sharp is *not ti* since sharps do not have syllable names. Instead, it is the note which occurs on the same staff degree with the last sharp which is *ti*.

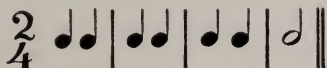
count up from this note and find *do*? Who can count down from *ti* and find low *do*?"

5. Continue finding *do* in all signatures from one to four sharps, inclusive. Find *do* from the signatures studied, using the music books.
6. Proceed in the same manner in finding *do* from the last flat. Call the note which occurs on the same staff degree with the last flat the syllable *fa*. This syllable will be easily remembered if attention is called to the fact that both *fa* and *flat* begin with the letter "f".
7. In conjunction with this learning, the child should also learn: (1) What is meant by the term *key signature*; (2) what the function of the *key signature* is, i.e., the changing of the position of *do* on the staff; and, (3) in staff notation, the relative location of the clef sign, key signature, and measure signature. Note that a bar is placed before the clef sign, then the clef sign is placed, then the key signature, then the measure signature. The clef sign and measure signature occurs at the beginning of each line of music. The measure signature is placed only at the *beginning* of the song.

Rests

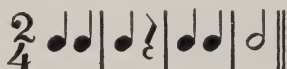
No rests should be introduced in music reading until sound durations can be performed expertly and accurately. All usual combinations of the quarter note and its multiples are sung and played prior to the introduction of rests. In order to insure vividness in the learning of rests, the quarter rest should be taught first. Its first use should be on a single beat, followed by consecutive quarter rests for more than one beat. The quarter rest may be introduced either through an exercise or in a familiar song. If taught first in an exercise, the following steps are suggested:

1. Place a familiar four-measure rhythmic phrase on the black-board such as:



2. Ask the class to sing it with a neutral syllable "tah" or "do" or play it on the tonette or song flutes.

3. Tell the class that you are going to sing it but instead of singing it as written you will make a change in it. "Watch and see if you can tell what the change is." Sing the exercise, and pointing to each note as you sing omit the second quarter note in the second measure. Point to it, rhythmically, but don't sing this note.
4. The class will observe which note was omitted.
5. Now erase the note which was omitted. Tell the class that when notes are not sounded, it is called "resting". "This time we rested *here*. On what kind of note did we rest?" (quarter note.) So in place of the note, we will have to place a sign which means *rest*—a *quarter rest* since it takes the place of a quarter note. It looks like this:"



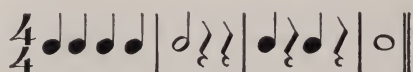
Class sing it. Several attempts may be necessary until it is done correctly.

6. Erase another quarter note in the exercise and substitute a quarter rest. Perhaps this time the last beat in the second measure. "Can you sing it this time without my help?"

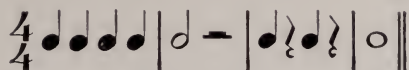


Note: At first, the rests should occur on the unaccented beats of the measure. A rest on an accented beat is much more difficult to sing or play than on an unaccented beat.

7. Proceed in like manner until a variety of quarter rests have been used in two-four, three-four, and four-four measures.
8. When two consecutive quarter rests occur, the teacher should substitute the half rest for the two quarter rests:



Erase the two quarter rests and write:



9. Do the same with the three-beat rest (— or —}) and the four beat or whole rest (—). If the children confuse the half rest and the whole rest, tell them that the whole rest is *stronger* so it can “hang” on the line. The half rest is *weaker* and must “sit” on the line.
10. After each rest has been taught, it should be liberally used in song reading, and in dictation.

If a familiar song is used in presenting the rests, the following steps are suggested:

1. Teach a song by rote (both words and syllables) in which the quarter rest appears.
2. Place the song on the blackboard or place the books in the hands of the children. Point to the notes as the song is sung, giving particular attention to the quarter rest.
3. Follow the observation of the rest in the melody with a brief drill, using a four measure phrase as described in the foregoing plan.
4. Read an unfamiliar song in which the quarter rest appears.

Two Equal Sounds to One Beat

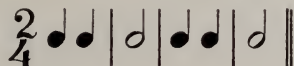
The equally divided beat (written as two eighth notes when the quarter note is the beat note) is the first experience the children will have in reading more than one sound to a beat. For this reason, much care should be exercised in teaching it. It is a fairly difficult problem to be learned correctly, but it should be learned with accuracy and precision since many of the duration patterns which follow are derivations of this simple division of the beat. A shoddy mastery of this pattern will make future learnings of rhythm more difficult.

1. The children are ready to learn this pattern when: (1) they have had ample experience in the use of music which employs the quarter note and its multiples, and cor-

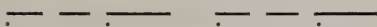
7. Write various combinations in two-four, three-four, and four-four measures for rapid drill. (It is usually best to include the new pattern in the second and third measures. Fill the first measure with the beat note and the last measure with one sustained sound to fill the measure.)
8. Use "block rhythms" for rapid drill. Establish the tempo and point to first one measure and then another as class sings.



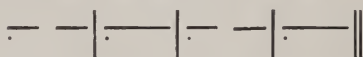
9. Use the new pattern in writing exercises. Begin by having the class "fill in" blank measures as was previously indicated in teaching the quarter rest.
10. By this time the class should be able to write an entire four-measure phrase from dictation. When writing an entire phrase it is an effective plan to outline for the class several steps to be followed. These steps are suggested:
 - a. Sing the phrase to be written with a neutral syllable. For example; this:



- b. Ask the class to sing it after you.
- c. Tell the class to make *long* and *short* lines for the *long* and *short* sounds. Like this:
- d. Sing again and ask the class to place a "dot" under each *accented* note.



- e. Place the measure bars—the bar coming directly before the accented note:



- f. Place stems on the notes, complete the note-heard, and place the measure signature.



11. Read the equally divided beat in unfamiliar song material. Encourage the children to “keep time” with the hand as they sing. Tell them to notice that the finger moves “down, down, down” for quarter notes, and for the eighth notes it goes “down-up, down-up, down-up,” etc.

In a well planned music program, the equally divided beat is usually introduced in the latter part of the third grade. This, however, will change with each school. Instead of prescribed grade placement the teacher should always determine when a new problem is to be introduced by analyzing what skills the learner should have as a preparatory background.

Minor Mode

Most beginning song material for children is written in the major mode, and for this reason, it is defensible to delay the teaching of the minor mode as a specific musical learning until the use of the major has become fairly well established. Furthermore, a background of reading skills in the major mode can be used in the learning of the minor since the relation between tones is the same for both modes. That is, the interval *do-la* or *la do mi* bears the same interval relationship in both major and minor tonalties. The difference between these two modes lies in the arrangement of tone combinations used. In major, the tones of the melody are built upon a structure of the *do mi sol*, and *do re mi fa sol la ti do*, tonality. In minor the melody is based upon a structure of the *la do mi*, or *la ti do re mi fa sol la*, tonality.

In teaching the reading of minor mode:

1. Prepare the children with a background of minor music by providing experiences in hearing music in the minor mode, singing rote songs in minor, and playing melodies

in minor on simple musical instruments. This should preferably be done some time in advance of the introduction to reading music in minor keys.

Note: The teacher can easily locate song material employing the minor mode by going through elementary music materials and looking for songs which (1) end on the syllable *la*, and (2) which make frequent use of melodic figures based upon the minor tonic chord, and the natural minor scale.

2. Isolate some of the common melodic figures found in the minor songs which have previously been learned by rote. Teach the syllables to these patterns in much the same manner that the combinations in major were introduced preparatory to the initial reading from the staff.
3. In addition teach the association of sound and syllable in minor through the use of pitch groups. Some common progressions in minor are:

la do mi do la

la - la

la ti do re mi

la mi fa re do la

la do mi la

la sol fa mi fa sol la

la mi do do la

la do ti re do la

la do mi fa mi do la

la ti do re do ti la

4. After several combinations of minor pitch patterns have been introduced, test the association of sound and syllables by calling syllables, aural pitch recognition, neighboring tones, the musical ladder, and other devices suggested in a previous section in the outline. These combinations may also be presented on flash cards for drill in rapid recognition.
5. Make liberal use of melodies in minor for dictation, creative work, etc.
6. The musical theory concerning minor keys should be reduced to a minimum during the introductory period. Some elements of theory to be taught in conjunction with the learning of the minor mode should include:
 - (1) Finding *la* from the last sharp or last flat, and real-

izing that *la* is to minor, what *do* is to major. (2) An understanding that *la ti do re mi fa sol la* is the natural minor scale, and that *la do mi la* is the minor tonic chord. (3) The ability to recognize quickly the difference between major and minor melodies, and major and minor chords.

7. Provide ample opportunity for reading melodies in minor keys, both through singing and playing instruments.

The Raised Scale Tone—*Fi*

After the children are able to read fluently simple melodies in both major and minor keys with the duration problems including the quarter note and its multiples, corresponding rests and the equally divided beat, the learning of a chromatic tone should be introduced. The most frequent chromatic tone to be found in elementary music is the fourth scale tone raised one-half step, or *fi*. This new tone is always indicated by an *accidental* sign. That is, by a sharp, natural, or double-sharp which *appears* directly in front of the note to be raised. The accidental is effective only within the measure in which it is written.

Since the various keys of the raised scale tone is represented by various accidentals, the teacher should keep the following points in mind:

Fi is used in place of *fa*. (Always written upon the *fa* line in space of the staff.)

Fi is one-half step *higher* than *fa*.

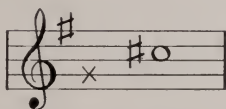
If *fa* is on a natural key tone *fi* will be written with a sharp.

If *fa* is on a *flatted* key tone *fi* will be written with a natural.

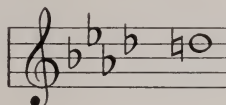
If *fa* is on a *sharped* key tone *fi* will be written with a double sharp.

(In the case of the fourth scale tone (*fi*), the double-sharp will seldom be used since *fa* does not appear on a sharped tone except when seven sharps are used in the signature. For practical purposes, then, we can conclude that *fi* will usually be written with a sharp or a natural.)

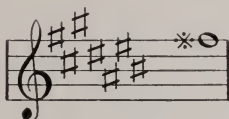
The following are some examples:



In the key of g major (above) *fa* appears on c natural. Therefore, *fi* is written with a sharp.



In the key of a flat major (above) *fa* appears on d flat. Therefore, *fi* will be written with a natural.



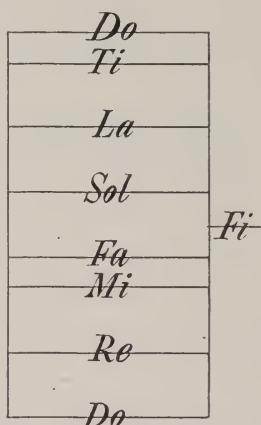
In the key of c sharp major (above) *fa* appears on f sharp. Therefore, *fi* will be written on f double-sharp.

The above explanation of the notation of *fi* is for the teacher's convenience. During the introductory stages of reading this sound the children will merely generalize that when an accidental (sharp or natural) appears before the note *fa* that it is to be called *fi* and sung with the pitch they have learned to associate with this syllable. The *theory* of accidentals does not appear until the latter part of the elementary grades.

In presenting the reading of this new syllable the procedure may be followed which was suggested for the natural reading of new pitch patterns. That is, a rote song may be taught in which the new sound occurs. This is to be followed by a presentation of the notes on the staff with the new problem isolated and studied in such a way that a transfer to the new sound in an unfamiliar song is made possible. However, this plan is not recommended in this case. Since the children have the necessary background for reading the song in which the chromatic will appear, it is suggested that:

1. The children read as much of the new song as possible.
2. The children note that without the accidental sign appearing before, the syllable would be *fa*.

3. A brief explanation be given to the effect that accidentals are sometimes used to raise or lower the regular tones of the scale. In this case that *fa* is *raised* one-half step and that it is called *fi*.
4. The song be left for the moment and the sound of *fi* established. The following way is effective:
 - a. Place the "ladder" or syllable chart in front of the class. (If no chart is available write the syllables on the blackboard.)



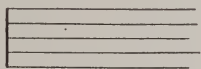
- b. Point to a series of combinations, thus establishing a feeling for tonality, the class sings as the teacher points, *do re mi re do*, *do mi sol do*, *do sol do*, etc.
- c. After a few familiar combinations have been sung, point to a progression which ends on *sol*. (*sol* is the *helping tone* for *fi*.) Be sure that the pitch of *sol* is well established in mind. Perhaps leave the chart and say "sing *sol* again."
- d. Now call *sol*, *do* (substitute, at the same pitch, the syllable *do* for the syllable *sol*). "Sing *do ti do*".
- e. Say to the class, "*Sol fi sol* sounds exactly like *do ti do*. Sing *do ti do* again. Call it *sol fi sol*". Point to *sol fi sol* on the ladder as the class sings it.
- f. Point to a series of combinations in which *sol fi sol* is used, the class singing as the teacher points.

5. Following the presentation of the singing of *fi*, it should be used in pitch groups in connection with *calling syllables*, aural *pitch recognition in writing from dictation*, etc. These devices will assist in making a permanent connection between the new syllable and its proper sound.
6. After the initial presentation of *fi* through the use of the "ladder", the class may then return to the song and complete the reading of it. The class should experience no difficulty in reading the new syllable correctly.

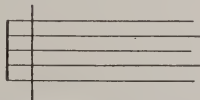
Making the Treble Clef

In most of the early writing of music done by the children, the clef is either not used or is placed on the staff by the teacher. The teacher, in this case, names the position of a beginning tone. As writing continues the children will want to construct their own clefs and key signatures. In teaching children to construct the treble or "g" clef observe the following points:

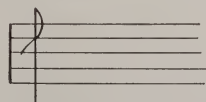
1. Before the clef is placed on the staff, a *single bar* should connect the top and bottom line of the staff.



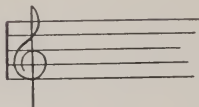
2. Indent from this bar about the distance of a space and a half and draw a vertical line. This line extends the distance of one space *above* the staff and about one space and a half below.



3. Begin the curved section of the clef at the top of the vertical line, allowing the curve to cross the vertical line at the *fourth line* of the staff.



4. Continue the curved line in such a way that it moves to the bottom line of the staff, back up to the third line, and down again across the second line.

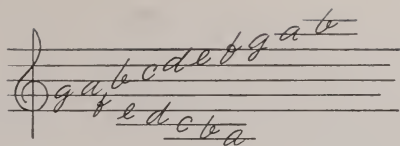


5. The class may be told that this sign was "once upon a time" a letter "g". It wraps its tail around the second line of the staff, making this line "g". From this line then we are able to find the letter names of the other lines and spaces on the staff. The class should realize that the lines and spaces of the staff have *no letter names* until a clef has been placed.

Naming Lines and Spaces

Although the ability to name the lines and spaces of the staff, by letter, is not essential to the adequate reading of music, it should be taught for use in the understanding of the elementary theory of music, such as the naming of keys and placing of key signatures. The usual method of teaching children to locate lines and spaces by a process of "spelling" or saying a sentence of which the first letter of each word is the letter of the lines is not advised. Children who learn by this method are unable to name notes which extend above or below the staff. This skill should be taught in such a way that it shows, realistically, the reason for each line or space being designated with a given letter name.

1. Tell the class that there is a musical alphabet. This alphabet is composed of the first seven letters of our a b c alphabet—a b c d e f g.
2. If one is able to say there are seven letters forward and backward, beginning with any letter, and completing the circle of seven, he can readily locate any letter name on the line or space.
3. Now show that when a given line or space is designated by the clef sign, all other lines and spaces may be assigned a letter name by "spelling" the musical alphabet from the point designated. For example, the "g" clef indicates that the second line of the staff is to be called "g". Thus:



4. After the relation of the musical alphabet to the letters of the staff has been clearly presented, there should follow a period of intensive use of the letters in writing the staff notation. If the children need drill work in quickly naming notes as they appear, this may be done by using a series of flash cards with an individual note on the staff placed on each card.

The Dotted-Beat-Note

Up to this point, the children have been reading extensively song material which employs the quarter note and its multiples, the equally divided beat, and corresponding rests. The next logical rhythmic problem, and the problem which probably occurs next in frequency in musical material is the dotted beat note. This usually appears in the form of the dotted quarter note followed by an eighth note.

Since the children have, no doubt, sung this pattern frequently in rote songs and since they can read musical material employing the pitch and duration problems mentioned, it is recommended that this pattern be taught by:

1. Presenting a new song in which the only unfamiliar problem will be the new duration pattern. Permit the children to read as much of the song as possible.
2. Locate the unfamiliar pattern. Observe its notation.
3. Leave the song and use the blackboard in teaching the sound of the new pattern. (Since the dotted beat note is a derivation of the quarter followed by two eighth notes, show this relationship in the presentation.) Place the following familiar pattern on the board. Ask the children to sing it.



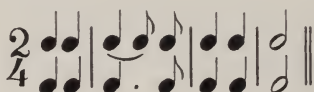
4. Tell the class that you will sing it, making a slight change in it. Point to the notes as you sing and in the second

measure *connect the quarter note with the first eighth note.*

5. Ask the class what change was made. They will probably say that the first two notes in the second measure were "sung together".
6. Tie the two notes indicated in the following manner. Sing it again for the class. Class sing it.



7. Now show the new notation for the tied quarter and eighth note by placing the dotted quarter note *directly underneath* the original pattern. Thus:



8. After the dotted beat note has been sung correctly in this way, drill on it briefly by placing it in other measures. The "block" rhythm device, previously explained, may be used in drilling on the new pattern.
9. Return to the song in which the problem was originally encountered and read the new pattern in its musical context.

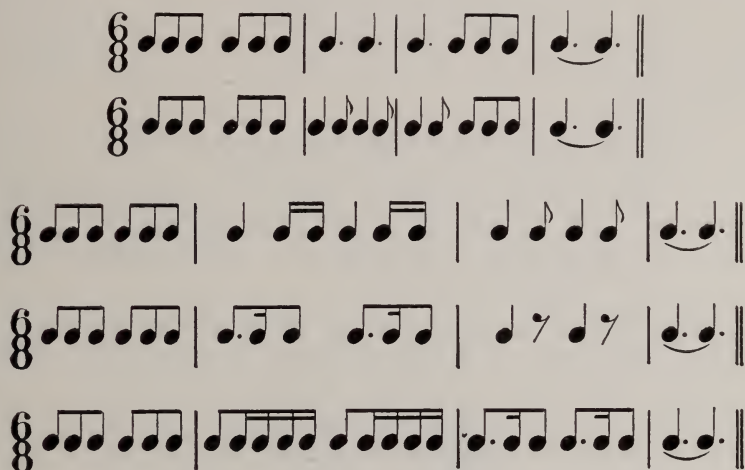
Six-Eight Measure

The presentation of six-eight measure will include no new rhythmic patterns. The problem in reading in this measure signature is largely one of translating familiar duration patterns into new notation. Instead of the quarter note receiving the beat, it is now the eighth note. The two beat note is the quarter note, the three beat note is the dotted quarter, the equally divided beat is two sixteenth notes and the dotted beat note is the dotted eighth.

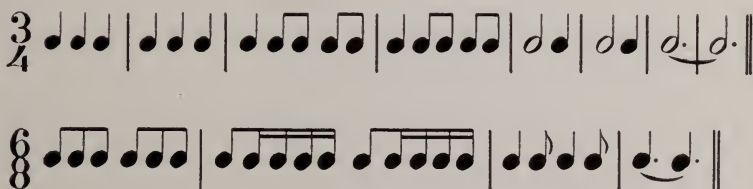
1. Begin by teaching several rote songs in six-eight measure, and if possible, listen to several pieces of music written in this rhythm.
2. Select a song (previously learned by rote) and present the written notation either in books or notes written on the

blackboard. If the song is simple, the class will read it with the syllables. Through observation, the class will note how each of the note values sound in this rhythm.

3. Place a series of simple four measure phrases on the blackboard and practice briefly on the new patterns. The following are frequently used patterns in six-eight measure:



Note: The above duration patterns appear to be more difficult than comparable patterns in which the quarter note is the beat note. Introduce these patterns, a few at a time, as they are needed in reading new song material. If the children are disturbed by the *number* of notes occurring in a measure, show that these notes sound exactly like the patterns they have been reading for some time. For example, place these two groups on the blackboard, as illustrative:



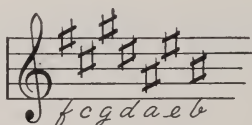
4. Make frequent use of six-eight measure in writing music by dictation and in creative work.

Placing Key Signatures and Naming Keys

With a background in reading in many keys in which the children have located the starting note of the song from the last sharp and the last flat of the key signature, and with an understanding of the meaning of the "g" clef and a knowledge of the names of lines and spaces, they are ready to place key signatures. The simplest way to teach this, and to avoid the unnecessary confusion which often arises when teaching "games" are used, is to teach the placing of the sharps and flats according to the appropriate letter name. The following steps are suggested:

Placing Sharps

1. Tell the class that the sharps are placed on F C G D A E B. These letters should be memorized as in the spelling of a seven letter word. (If only a portion is taught at a time, in one to four sharps, inclusive, teach only the four letters—F C G D.)
2. Next, locate the sharps on the appropriate staff degree, referring to the appropriate letter for each sharp placed.

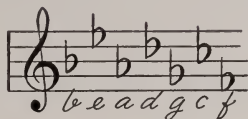


The class will find it necessary to remember that the "F" refers to the top line, rather than the first space of the staff. From this point on, their attention may be called to the fact that each succeeding sharp alternates *up* and *down* with the exception of the fifth sharp. That is, start with the "F", go *down* for the next "C", up for "G", down for "D", etc.

3. Place one sharp, find *do*, and name the major key. (The letter name of the line or space upon which *do* appears is the name of the major key.)
4. Place one sharp, find *la* and name the minor key. (The letter name of the line or space upon which *la* appears is the name of the minor key.)
5. Continue finding *do*, and *la* and naming the major and minor key for each signature from one to four sharps, inclusive.

Placing Flats

1. Tell the class that the flats are placed on B E A D G C F. Memorize this sequence of letters.
2. Locate the flats on the appropriate staff degree, referring to the appropriate letter for each flat placed.



3. Place one flat and find *do*, and *la*, and name both the major and minor key as was suggested for the sharp keys.

Note: In naming keys according to this plan, care should be taken to use the flat and sharp in the key name when necessary. After *do*, or *la* has been located, always look at the signature to determine whether or not a sharp or a flat has been placed upon the staff degree upon which *do* or *la* falls. For example, in two sharps *do* falls on "D"—only the letters "F" and "C" have been sharped—therefore, the major key is D natural. In two flats, *do* falls on "B"—"B" and "E" have been flatted in the signature—therefore, the major key is *B flat*.

It is doubtful that elementary school children, as a group, should memorize key names. A working knowledge of keys which employs the use of the tools described above is sufficient. If, however, a child shows exceptional talent in music and is following a special interest, such as learning a musical instrument, the ability to name keys at sight when the signature is given will be a decided asset in later musical learning.

The Lowered Scale Tone—*Te*

The steps to be followed in the teaching of the lowered scale tone are the same as suggested for teaching the raised scale tone *fi*. By referring to this section of the outline, it will be seen that the raised scale tone tends, in most instances to resolve upward. Thus the "helping" tone for the syllable *fi* is *sol* which is one-half step higher than *fi*. The normal tendency of the lowered scale tone is downward, hence, the "helping" tone is the

scale tone one-half step below the lowered chromatic which in the case of the lowered seventh tone *te* will be *la*. If the ladder is used as a device in the initial presentation of this chromatic, proceed as in teaching *fi* except:

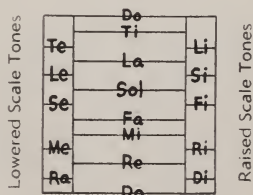
1. Sing several pitch patterns ending on the syllable *la*.
2. Establish *la* well in mind and substitute for it the syllable *mi*.
3. Sing *mi fa mi*.
4. Tell the class that, "*mi fa mi* sounds exactly like *la te la*".
5. Sing *mi fa mi* several times, and then substitute *la te la* for it.
6. Sing several scale and chord progressions in which the *la te la* appears.

Following the introduction to the new sound, it should be sung from notation.

Chromatic Tones Other Than *Fi* and *Te*

The raised fourth, and the lowered seventh scale tones are the most common chromatics used in simple music. After these two tones have been introduced and sung in a variety of combinations, the other *raised* and *lowered* scale tones are not difficult in that they sound exactly the same as *fi* or *te* in relation to their "helping" tone. That is, *la si la*, *mi ri mi* and *re di re*, sound exactly the same as *sol fi sol*. Likewise, *sol le sol*, *re me re*, and *do ra do* sound like *la te la*.

1. Sing the various raised and lowered scale tones by referring to the ladder. Use the "helping" tone—for raised scale tones. Sing *la si la*, *mi ri mi*, etc. For lowered scale tones sing *la te la*, *re me re*, etc.



2. Learn that:

Do raised one-half step is *di* (dee)
Re raised one-half step is *ri* (ree)
Sol raised one-half step is *si* (see), etc.
Mi lowered one-half step is *me* (ma)
Re lowered one-half step is *ra* (rah)
La lowered one-half step is *le* (la), etc.

3. Learn what accidentals are used in *raising* and *lowering* scale tones:

a natural (\natural) raises a flatted scale tone one-half step
 a natural (\natural) lowers a sharped scale tone one-half step
 a sharp (\sharp) raises a natural scale tone one-half step
 a flat (\flat) lowers a natural scale tone one-half step
 a double sharp (\times) raises a sharped scale tone one-half step
 a double-flat ($\flat\flat$) lowers a flatted scale tone one-half step
 a natural and a sharp ($\sharp\sharp$) lowers a double sharp one-half step
 a natural and a flat ($\flat\flat$) raises a double flat one-half step.

4. In writing chromatic tones, use the following steps:

- a. *Fi* is used in place of *fa*
 - b. *Fi* is one-half step *higher* than *fa*
 - c. *Fa* is on C natural
 - d. Therefore, *fi* will be on C sharp
- Substitute *any* chromatic on any staff degree, using the same four steps. Another example might be:
- a. *Te* is used in place of *ti*
 - b. *Te* is one-half step *lower* than *ti*
 - c. *Ti* is on C sharp
 - d. Therefore, *te* will be on C natural

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HELPS FOR THE TEACHER ON SPECIAL PROBLEMS

SUGGESTIONS FOR TEACHING BI-LINGUAL CHILDREN

Bi-lingual children are those who think and speak at home in a language other than English, and who must learn to think and speak in English at school and in other places. These children frequently present a difficult problem for the teacher, especially when they first enter school. Not only do they have to learn to think, speak, read, and write in a new language, but often they come from an environment which has offered but few opportunities for developing concepts (ideas and understandings) about the things which are presented in pre-primers, primers, and first readers. Such children are sometimes timid and shy and experience difficulty in becoming a part of the social school group. Poor school attendance due to unhealthful home conditions, work, indifference and lack of understanding on the part of parents, and other reasons, further complicate the problem.

GENERAL SUGGESTIONS FOR WORKING WITH BI-LINGUAL CHILDREN

1. Provide an attractive, cheerful schoolroom setting. Make school a pleasant place in which to work and play.
2. Make friends with the child. Let him know that you like him. Children are sensitive to any feeling of superiority on the part of the teacher.
3. Help the child to adjust to the other children in the school. Enlist the support of the other children in helping the bi-lingual child to feel at home in his new surroundings.
4. Stress the best things in the culture of the country from which the child's ancestors came. Point out the contributions which his people have made to American life.
5. Give special recognition to the things the child does well. Lead the other children to appreciate his contributions to the group living in the school.

6. Provide work which the child can do with a reasonable degree of success.
7. Build much background through concrete, first hand experiences, pantomime, models, drawings, pictures, and the like.
8. Avoid hurrying the child into formal school work. Take time to develop language ability, experience background, social adjustment, and emotional stability.
9. Emphasize habits of health and cleanliness. Develop a desire on the part of the child to be healthy and clean.
10. Establish friendly relations with the child's home. Work toward securing the cooperation of the home in matters of cleanliness, health, school attendance, etc.
11. Become acquainted with the welfare workers in your community. Welfare agencies and the school should work together for the improvement of living in the homes from which the children come.
12. Evaluate the child's work in terms of improvement made in language, concept development, habits of cleanliness, and social and emotional adjustment as well as his progress in academic learning.

POINTS TO KEEP IN MIND IN TEACHING ENGLISH TO BI-LINGUAL CHILDREN

1. Children who speak no English are confronted with the task of learning a new language. Their problem is the same as that of the English speaking child who attempts to learn to speak Spanish or some other foreign language.
2. Speech is developed in response to a need. The school must set up situations requiring English. Use the child's own language as little as possible. Pantomime may be used to develop the meaning of words, but it should not be allowed to take the place of words. If the child feels that he can make his wants known without using English, he will have no incentive for learning it.
3. Speech is learned through imitation. It is important that the teacher use few words, repeated frequently in many connections, speaking distinctly and naturally.
4. Use the "direct method" in teaching English to foreign speaking children. In the direct method no translation

is used. Children learn to think in terms of English by hearing English symbols attached repeatedly to objects, pictures, actions, and experiences and then attempting to use these symbols directly in conversation. Only in emergencies should the native language be used. The following illustrates the direct method:

Situation	Response
Hand the child a book saying, "This is a book."	Child says, "This is a book."
The teacher runs, saying, "I run."	Child runs and says, "I run."
The teacher touches a child's dress, saying, "This is a dress."	Child says, "This is a dress."

Since many English words do not call up visual images or have objects with which they may be connected, these must be connected with other words. Such words are: these, that, the, are, is, by, it, etc. Taught in short, simple sentences they are in their proper settings and gradually come into use in the child's vocabulary. All words must be repeatedly used in many different ways.

5. Some of the important principles in learning a new language are:
 - a. Present a clear oral image.
 - b. Develop meaningful associations with oral images through demonstrations, objects, pictures, etc.
 - c. Provide opportunities for the child to hear words in many different situations.
 - d. Provide abundant opportunities for using the words which have been presented.
 - e. Encourage the child to use the new language in school, on the playground, and at home. Praising his accomplishments will do more to stimulate a desire to speak English than rules forbidding him to use his native language. Stress the fact that he is learning another language and that soon he will know two, which is one more than most of the other children know.
6. Prevent errors in speech from developing. They are the result of incorrect learning due to: (a) inaccurate oral image; (b) inability to form the new sounds; (c) mix-

ture of expressions of the native and English languages; (*d*) inadequate practice; and (*e*) insufficient number of associations. The teacher's own pronunciation and enunciation are the models for imitation.

Some common errors are:

- a. Enunciation
 Vowels are troublesome
 Words ending in *t, h, g, ly, ing, est*
 Omitted endings: "I go to sing class."
 Some consonants are difficult: *d* for *th*, *t* for *th*,
 b for *v*, *ch* for *sh*, *sh* for *ch*.
- b. Incorrect choice of word: *too* or *so* used for *very*
 as in: "I am *too* much bigger than you."
- c. Incomplete sentences used as complete thoughts:
 "For why." "To school."
- d. Omission of words: "What to read now."
- e. Insertion of words: "I will go *to* home."
- f. Incorrect use and placement of parts of speech
 Nouns: "I have two *book*."
 Verbs: "I *go* right home last night."
 Adjectives: "I draw a cow *black*."
 Articles: "I can't find pencil."
 Pronouns: "Maria, *he* is hurt."
 Prepositions: "Tony plays *in* the teeters."
7. The teaching of English does not stop at the end of the first year, but is a continuous process which extends through the entire school life of the child.

MATERIALS SUITABLE FOR BI-LINGUAL PUPILS

Pictures, objects, construction materials, books, and the like, aid the teacher greatly in teaching English to bi-lingual children. Many of these things are collected rather than purchased.

1. Pictures, classified into groups from many sources, such as magazines, rotogravure section of Sunday newspapers, ten-cent store picture books, school supply firms, catalogues, old books, etc.
2. Objects, such as toys—airplanes, dolls, wagons, celluloid animals, balls, musical instruments, garden tools; home objects—family of dolls, play house showing various

rooms, furniture; things for keeping house—cooking utensils, washing and ironing equipment, cleaning materials, dishes, tub, washboard, iron, ironing board, clothespins; personal cleanliness materials—soap, toothbrush, toothpaste, towels, washcloth, fingernail file, wash basin.

3. An assortment of construction materials such as scraps of wood, wooden boxes, nails, tools, scraps of colored paper, newsprint, wrapping paper, crayons, paints, composition board, cartons, clay, paste.
4. Library books. For first grade, there are now available many inexpensive picture books that help with oral English. Such books should be chosen for interesting, bold, colorful pictures, suitable text in child language, and because they vitalize the vocabulary being taught. Some of the picture collection may be utilized in making scrap books. Often children like best books they make themselves. Illustrations are made by the children and a text printed by the teacher.

TEACHING ENGLISH THROUGH ACTIVITIES

Many types of activities offer excellent opportunities for developing the ability to speak English in real, lifelike situations. If the activity is one in which the child can engage successfully and in which he is interested, the motivation for learning English is greatly increased. Many of the suggested activities listed in the Program of Social Studies for the Elementary School of this Course of Study for Grades One and Two are suitable for use with non-English speaking children. Furnishing a play house vitalizes the learning of the names of the various articles of furniture, and using the play house as a center for dramatic play offers opportunities for much use of conversational English.

A doll or toy day is rich in language possibilities. Planning and carrying out plans for a Hallowe'en party may add greatly to language experiences.

One teacher carried out a Thanksgiving activity in which the children made dishes and foods of clay; knives, forks, and spoons of cardboard; and a tablecloth and napkins of paper. As these things were made the children learned their names and how they were used. They practiced setting the table. The teacher said, "Mary, you may put on the table cloth." Mary brought the table

cloth and said, "This is a table cloth. I put it on the table." In similar manner other children brought other articles, each child telling what it was and something about it. The activity culminated with a "play" Thanksgiving dinner.

This activity would have been more lifelike and probably more worth while if "real" instead of "play" things had been used, including real food and a real dinner, even if only one or two foods had been served. It does, however, illustrate the teaching and use of language carried on through an activity.

DEVELOPING READINESS FOR READING

Developing readiness for reading is especially important for the bi-lingual child. One of the most important abilities necessary for successful beginning reading experiences is facility in the use of the English language. No reading should be attempted before the child is able to express himself in English. Before reading can be developed in a meaningful way, words, phrases, and sentences must be recognized in spoken form and associated with the objects, actions, or the ideas for which they stand.

Most bi-lingual children will need a much longer time in which to develop readiness for reading than children who have no language handicap. Not only are these children lacking in ability to speak English, but often their background of experience has been quite meager so that they do not have a knowledge of many of the things with which the beginning reading stories deal. Many schools expect that most bi-lingual children will need at least a year of readiness development before they begin book reading. These non-reading groups are often called pre-first grade. Nursery schools, play schools, kindergartens, and the like, for pre-school bi-lingual children, aid greatly in getting these children ready for first grade work. Unfortunately most schools do not have facilities for pre-school experiences for such children.

Methods of developing readiness for reading will not be discussed in this Course of Study since this subject is treated rather fully in a Department of Education Curriculum Bulletin issued in 1940 entitled, *Adapting the Reading Program to the Needs of the Individual Child*. This bulletin may be secured through the office of the County Superintendent of Schools. Harrison's book, *Reading Readiness*, is invaluable to teachers in planning the readiness program. Many of the suggestions con-

tained in it are applicable to developing reading readiness on the part of bi-lingual children.¹

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TEACHER MADE TESTS AND PRACTICE MATERIALS

Carefully prepared teacher made tests and practice materials are aids to effective teaching. Commercial workbooks help in meeting the need for test and practice materials, but many schools are not financially able to supply them. Then, too, such materials often fail to meet the needs of a particular group and their use degenerates into a purposeless filling of blanks and checking of answers. Therefore, regardless of the financial condition of the school system, teachers will, if they strive to meet individual and group needs, find it necessary to prepare some of their own test and practice material for classroom use.

PRINCIPLES UNDERLYING THE PREPARATION AND USE OF TEACHER MADE TESTS AND PRACTICE MATERIALS

Tests and practice materials should be used as aids to more effective learning. Learning results in changed behavior. A child who is taught the use of the index of a book, but who does not use this aid in locating information about a topic in geography, has not learned in the fullest sense. His behavior in regard to the use of books has not been changed. We are concerned with the functioning of skills and abilities; not the learning of skills and abilities for their own sake. Whether or not abilities taught will be used depends in part on how meaningful the teaching and practice have been, and on the opportunities provided to use them in real situations. Thus, in teaching the use of the index of a book, the child needs to know why it is important that this ability be acquired, and opportunities to use this new ability should be provided in such fields as social studies and science.

It is difficult to prepare tests which measure the *degree* of understanding possessed by a pupil. It is still more difficult to measure the ability to use skills, abilities, and information intelligently. These things will have to be checked largely by teacher observation. Tests have definite limitations even in the academic field.

We must never lose sight of the fact that education is concerned with the growth of the whole child, physically, socially,

morally, and emotionally, as well as academically. Tests and practice materials may contribute to growth in the acquisition of certain skills and abilities, but at the same time, if tests are used in the wrong way, they may be a deterrent to growth in other lines. Tests and practice exercises should be used to aid in guiding the child's learning and to motivate his efforts by showing progress. *When undue emphasis is placed upon grades derived from tests, their purpose may be defeated. Furthermore, emotional disturbances may arise, anti-social habits develop, cheating becomes commonplace, and even physical well-being may be impaired.*

If the work is in keeping with the ability of the child and if comparisons are made only with his own past record, not with others in the class, the child usually enjoys tests and exercises, and they become what they are intended to be, aids to effective learning.

Teacher Made Tests

Purposes of Teacher Made Tests

1. They aid in measuring pupil progress on a given unit or area of work. This is especially true if the test is given before and after the unit has been studied.
2. They are diagnostic in that they indicate where learning has failed to take place, both for the individual and the group. Weakness thus discovered may be overcome by re-teaching. Pretests, that is, tests given before study, may show what phases of the work need most emphasis.
3. They serve as motives for effective work. If the things to be learned are within the ability of the child, and if the purposes for learning them are evident to him, he will eagerly welcome the opportunity which the test affords for evaluating his learning. Progress records, showing gains made, stimulate effort. We all like to see the improvement we are making.

Criteria Which Teacher Made Tests Should Meet

1. They should be as objective as it is possible to make them.¹
By objective we mean that the answer is either right or wrong. If a test is completely objective, any number

¹Objective teacher made tests, as well as standardized tests, provide but little opportunity for written expression in sentences and paragraphs. This is really not a limitation, since objective tests are not intended to develop ability in written expression, but to measure learning. Ability in written expression should be developed by providing interesting and challenging situations in which children will want to write, together with instruction in techniques in writing suited to the learning level of the individual.

of competent persons, scoring the same test paper, would check all answers the same. It is important that tests be objective because we are attempting to measure skills, abilities, or information. If the test is so constructed that many answers may be either right or wrong, depending upon the point of view of the person scoring, we do not have a measure of the pupil's knowledge. Of course, no one has ever made a test which was completely objective.

2. The skills, abilities and knowledges tested should be those which are important for the pupils to learn. The course of study used in a school may serve as a guide in determining what things should be taught and tested.
3. They should test material taught.
4. In some fields, tests should be completely diagnostic. This is especially true in the testing of number facts, fundamental processes in arithmetic, and vocabulary skills and abilities in reading. In order for a test to be diagnostic, it must cover all of the things which the pupil is expected to learn. A sampling test, covering, let us say, one out of every five things to be learned, is inadequate for diagnostic purposes. We know whether or not the child has learned the one, but we are entirely in the dark in regard to the other four. A sampling test may give a rough estimate of a pupil's accomplishment, but it is of but little value in discovering specific weaknesses. It may be argued that if all tests cover all of the things we expect the child to learn, they become too long and require too much time to prepare, take, check, discuss, and follow up. In this event, perhaps we are expecting the pupil to learn too many things. A careful study of what is most important for the child to learn, using the course of study as a guide, may result in a much shortened list of items to be tested, and more effective learning.
5. In some fields tests may be both diagnostic and sampling. for example, within any given unit in social studies there are certain understandings which we wish all children to gain. The test on this particular unit should cover completely these understandings. But we may wish to know how much more has been learned beyond

this minimum, so a sampling of other understandings may be added to the minimum part of the test.

6. Test items should be as clearly stated as possible.

Practice Materials

To drill or not to drill is a much debated issue. Some say that if we wait until the child is ready to learn a given skill and has an immediate use for it which he recognizes, drill as such becomes unnecessary. We know that a child may learn a skill through drill, and soon forget it if no opportunities for its use arise. Isolated drill on skills not understood, where readiness is lacking, and use is in the distant future, is undoubtedly a waste of time. Practice, in some form, is necessary for learning. The more meaningful the practice, the more effective the learning. For example, one very good way to build a reading vocabulary is for the child to meet the new words which have been presented and for which meanings have been developed, over and over again in the reading of interesting books. In so far as possible we should see that such drill as we use is meaningful, and closely related to the life situations in which the skill or ability functions.

Purpose of Practice Materials

The chief purpose of practice materials, as the name implies, is to give opportunity for practice on skills and abilities which have been presented but not permanently fixed. In addition, practice materials may serve any one or all three of the purposes listed under tests, namely they may measure progress, indicate weaknesses, and serve as motives for learning.

Criteria for Making and Using Practice Materials

All of the criteria listed for tests apply to practice materials. In addition the following should be observed as far as possible:

1. Practice materials should be meaningful, that is, the child should understand the skill or ability to be acquired, he should see the need for acquiring it, and desire to do so.
2. Practice materials are most valuable in the skill or tool subject fields such as arithmetic, mechanics of reading, study skills, etc.
3. The amount of practice necessary to fix a skill or ability will depend upon many factors among which are: (1) the ability of the individual, (2) the meaningfulness of the

process to him, and (3) the opportunities which he has to use what he has learned.

4. Presentation and practice on skills or abilities for which the child has no use is a waste of time.
5. Practice materials should provide the most drill on the most difficult skills and abilities.
6. Any one practice exercise should not cover too many steps involved in a skill or ability.
7. Drill on any given skill or ability should be distributed, and provision made for review from time to time. That is, after a skill or ability has been presented, concentrated drill may be used, followed at increasing intervals thereafter by review exercises.
8. Provision should be made for more drill for the slow learner, than for the average or bright child. *Practice materials, to be most effective, must be administered on an individual or small group basis, thereby providing the kind and amount of drill needed by any given pupil.*

TYPES OF TEACHER MADE TESTS

There are a few well known types of teacher made tests, but within each type there are many variations. Some of the better known and more frequently used are given.

True-False. Statements, some true, others false. Pupils check them true or false. "Yes-No" tests are of the same kind except that questions instead of statements are used.

This type of test has been widely used, perhaps because it is easy to score. Critics of it contend that guessing is encouraged, which they say is a bad habit to develop. In scoring, allowance is made for guessing by counting two off for each item wrong. Negatives should be avoided in preparing this test since they usually indicate a false statement. If used sparingly, the true-false test adds variety to the testing program.

Modified True-False with Reasons Why the Statement Is True or False. This test is perhaps better than the straight "True-False." It requires more thinking and discourages guessing. It is more difficult to score and is less objective.

Multiple Choice. There are many variations of this test. The usual form consists of several statements or items, usually four

or more, only one of which is correct. The pupil underlines the correct item. If four items are used, guessing chances are cut to one in four, or twenty-five percent. In this case the usual procedure in scoring is to make no deductions for guessing. This test is considered by many to be better than the "True-False."

Example: Colorado produces more (wheat-corn-sugar beets-potatoes) than any state in the Union.

Matching. Again we find many variations. We can match words with pictures or with meanings, events with dates, causes with effects, historical figures with what they did, cities with the states in which they are found, etc. The test usually consists of two columns, one numbered, the other lettered. The pupil places the proper letter in front of the proper number.

Example:

Column I		Column II	
<i>c</i>	1. Grant	<i>a</i> .	Commander in chief of the Union Army at the beginning of the Civil War
<i>d</i>	2. Lincoln	<i>b</i> .	Union General who marched from Atlanta to the sea
<i>e</i>	3. Lee	<i>c</i> .	Commander in chief of the Union Army
<i>b</i>	4. Sherman	<i>d</i> .	President of the United States during the Civil War
<i>g</i>	5. Davis	<i>e</i> .	Commander in chief of the Confederate Army
		<i>f</i> .	Leader of a band of outlaws during the Civil War
		<i>g</i> .	President of the Confederate States

More items are included in Column II than in Column I to lessen the chance of getting the correct answers through a process of elimination. Matching tests are fairly easy to make, fun to take, and easy to score.

Organization. In the "Organization Test," several items, such as historical events, developmental processes, etc., are listed in mixed order. The pupil rearranges them in the order in which they came.

Example: Arrange the items below in order of discovery

Torch	Gas burner
Electric light	Candle
Kerosene lamp	Ancient lamp

Completion. This test consists of a statement, part or parts of which are left out. It is difficult to make a good completion test. Usually they are either too easy or too difficult. The pupil may not have the same mind set as the person making the test. Often items on this test are difficult to score.

Example:

The Pilgrims came from.....and settled at.....
in.....

(Each blank would be counted as one item and would score one point.)

In making completion tests, usually only one word is omitted from each blank.

Short Answer. This is a good test where definite short answers can be given to specific questions. Guessing is reduced to a minimum; the pupil usually either *does* or *does not* know the answer. (Number facts and problems in arithmetic might be considered a form of this type of test.)

Example:

Who was president of the United States during the
World War?

Essay. The usual characteristic of this test is questions which involve long answers. The chief difficulty in using it lies in the scoring. It is hard to score objectively; one is often not sure just what is meant. Also the answer may be partly right and partly wrong, or the complete answer may not be given. In an effort to score essay tests more objectively, some authors suggest that the teacher write out the correct answer in advance of the scoring to compare with pupil answers. Answers may then be compared on a five-point scale ranging from 0 to 4 points credit. Other scales could, of course, be used. It is generally agreed, among those who are authorities in testing, that the essay test is not an objective measure.

Map. Map tests are valuable for measuring place location information in geography. One form of this type of test is made

by numbering places (countries, cities, rivers, mountains, etc.) on an outline map. The pupil numbers his paper and then is given the outline map. He writes after the appropriate number on his paper the name of the place occupied by the same number on the map. The kind of place will need to be designated. For example, numbers 1 to 5 may be rivers; 6 to 9 mountain ranges, 10 to 12 countries, and 13 to 16 cities. This information may be written at the bottom of the map. Another method is for the teacher to point to the places on a large wall map placed far enough away so that the pupils cannot see the names of the places, and have them write the place to which he points. The teacher might say, "The places to which I point are cities. Number your papers from one to ten. Number one, (pointing to Chicago). Number two, (pointing to New York)." Etc.

TYPES OF PRACTICE EXERCISES

Many practice exercises are of the same types as the tests which have been described. Frequently a practice exercise will cover only a small part of a certain skill or ability, whereas the test may cover several. For example, we may have separate practice exercises on each of the steps in addition of unlike fractions, and a test over the whole process. From the standpoint of use, we might say that practice exercises are to provide drill; tests to measure progress and find weaknesses. Actually both exercises and tests do all three of these things.

In many cases practice materials need to be administered on an individual basis. Not all children need the same amount of practice, one presentation being sufficient for some, while others require many repetitions. Materials which can be used individually are an aid in adjusting practice work to the needs of the child. They also provide work which some children may do while the teacher is occupied with another group. Such materials may be kept from year to year and used indefinitely.

Where several children are to use the same materials some means of duplicating them is desirable. If only a few children are to use them, single copies may be sufficient. In either case, some system of numbering and of filing will be found necessary. Small packing boxes may be used for this purpose. An individual card, on which the exercises completed by each child may be recorded, should be kept. Older children may keep their own records. Checking individual work requires but little time and may be done by the teacher or an older child.

TEACHER-PUPIL PLANNING OF UNITS OF WORK

Units of work need to be planned by the teacher, but this does not mean that they are to be handed to the pupils to be followed just as they are prepared. Much of the teacher's planning should consist of getting a background for the unit, developing interesting approaches to it, finding materials, books, pictures, concrete objects and the like, and thinking about possible excursions and activities which may make the work more meaningful. He will need to outline his plans, but he should not present these plans to the pupils until they have had an opportunity to develop plans of their own.

In other words, the pupils themselves should have a part in raising questions and problems which they wish to study and in planning the ways and means of finding out about them. The teacher is the guide and advisor. He sets the stage through the presentation of the unit and adds his suggestions to those of the class.

Through such a procedure the purposes for the study of the unit become the pupils' purposes. Furthermore, they are learning the democratic techniques of group planning and cooperative endeavor, and are developing wholesome attitudes toward their work and their fellow workers.¹

STEPS IN WORKING THROUGH A UNIT

There is no set plan for working out a unit.² The six steps given below are merely suggestive. Neither is it possible or desirable in practice to consider each step in isolation from the rest. Building a background, that is developing meanings and understandings, and stimulating interest is the major job in Step 1, Presentation, but certainly background building will be continued whenever necessary throughout the unit. Likewise, planning and evaluation will not be done all at once, in fact plans

¹The practice of making page or chapter assignments has nothing to justify it. Teachers frequently complain that children do not remember what they read. The remedy often applied is to tell the child to "read it again" or "to go to his seat and study hard." Have you ever counted the number of facts presented on a page in a geography? If not, do it! If the child is to read and study intelligently, he must have some idea what he is to get from his work. Most children do not learn to study all by themselves. They have to be taught. Organizing work on a basis of units with suggested questions, topics and problems, aids in more effective learning and at the same time develops study abilities.

²By a unit of work we mean a large area of related material and experiences from one or more fields studied over a period of time. For example, "The Period of Discovery and Exploration" in American history, might constitute a unit of work, involving not only history but the geography related to it as well.

will need to be evaluated continually and altered in the light of such evaluation.

1. **Presentation.** Here the teacher is the leader. He makes use of the past experiences of the children in leading them into the new field. He endeavors to develop background through the use of description, explanation, reading to the group, drawings and diagrams, pictures, concrete objects, and excursions. The children participate in the discussion, asking questions and making contributions.
2. **Planning.** The cooperative setting up of questions and problems, and plans for realizing the objectives which they represent.
3. **Carrying Out Plans.** Study, research, activities, experiments, and the like, which lead to realization of objectives set up.
4. **Sharing Experiences.** Discussion of the problems and questions raised, demonstrations, reports of committees and individuals, evaluation of materials presented, etc.
5. **Culmination.** May be as simple an activity as summarizing the results of the findings, or it may involve activities such as a radio program, pupil-made movie, creative play, exhibit, etc.
6. **Evaluation.** Have we accomplished what we set out to do? Have our plans functioned efficiently? What have we learned in carrying out this unit which will enable us to better plan the next?

SOME THINGS WHICH THE TEACHER'S PLAN FOR A UNIT MAY CONTAIN

Here again we have no set formula. What goes into a unit will depend upon the group, their background, needs, and abilities, and the materials which are available. The following outline suggests what the teacher might set up as a rough guide in working out a unit with his group.

1. Name of the unit
2. List of important understandings to be developed
3. Notes on ways of presenting the unit
4. Suggested questions and problems which will develop the understandings listed under Number 2

5. Suggested activities which will aid in answering the questions and solving the problems
6. List of available materials which may be useful
7. Suggestions for culminating experiences
8. Suggested ways of evaluation

Some teachers like to give a pre-test over the unit before study and repeat the same test at the end of the unit. The pre-test gives an idea of what needs to be emphasized; the final test is an aid in evaluation; and a comparison of the two gives a measure of progress. If this procedure is used, care must be taken to test only those understandings most important for children to gain.

Since we are interested in the development of the "whole child," means of evaluation other than tests, will need to be used. The evaluation of such abilities as using study skills, planning and carrying out plans, evaluating work done, working cooperatively with others, exercising resourcefulness, doing creative work, etc., will need to be done by observation of the children by the teacher. Some teachers find it helpful to make a chart, on which such abilities as those listed above are checked for each pupil, to show what progress is being made. A chart of this type should not be placed on the wall for all children to see, but should be kept in the teacher's desk as an aid to him in guiding the growth of individual children and the group.

It will be noticed that in this outline no mention is made of facts to be learned. Facts are necessary for the development of understandings. They are meaningless in isolation, but when related to questions and problems they take on meaning. For example, in a unit on Colorado, one understanding to be developed might be:

Many parts of Colorado are dry and irrigation and dry farming methods are necessary to produce crops.

A question which would lead to this understanding might be:

Why is it necessary for farmers in Colorado to use special farming methods, such as irrigation and summer fallowing, in order to produce crops?

A fact bearing on this problem is that in many parts of Colorado the average annual rainfall is less than fifteen inches. This fact in itself is a useless bit of information, but related to growing crops it is very significant.

SIMPLE ORGANIZATION FOR AN ELEMENTARY SCHOOL LIBRARY

ORGANIZING A LIBRARY

The organization of classroom and school library collections is growing more essential each year with the publication of countless delightful and useful books and periodicals for pupils. Every school can have a simple library collection so organized as to develop life habits of pleasant and profitable reading.

In order to carry on an enriched curriculum and to provide for an improved course of instruction as outlined in the state course of study, a definite effort should be made to increase library facilities each year. A simple organization for such libraries, or library corners, will help to vitalize the curriculum. Some of the advantages that may be expected from such an organization are as follows: (1) Saves the teacher's time. (2) Provides a means of an accurate checking on books. (3) Allows for a more extended use of available books. (4) Builds important steps that lead into library habits. (5) Leads into the use of a standard library.

The ideal library is planned for beauty as well as for service. It should be of adequate size, centrally located, preferably adjoining a workroom and conference rooms. Shelves and reading tables should have an adequate amount of natural light. Enough open shelves should be provided to accommodate the books without crowding.

The essential equipment consists of librarian's desk and chair, filing case for pamphlets and pictures, a charging tray, bulletin board, and catalog cabinet. A few well-selected pictures, an attractive piece or two of pottery, and growing plants make the library room more attractive.

Until ideal or authentic library equipment and material can be purchased, every classroom may begin a library at very little expense, with pupils and teachers cooperating. It is hoped that real library facilities will grow out of a school interest begun in a simple way. The following suggest ways to begin:

1. The library should be organized as an activity unit with the planning and help of the pupils. Such a unit may include the following problems:
 - a. Where is the best place to put the library?
 - b. What is needed for equipment? Can we make it? What materials are available?
 - c. How are books prepared for a library?
 - d. What committees do we need for the work?
 - e. What are the rules for good library conduct?
 - f. How can we get more books?
 - g. Who would make a good librarian?
2. The library may be a corner or end of a classroom or an extra room in the building.
3. Many groups of pupils, with their teachers, plan and make their own library equipment.
4. Tables, chairs, and shelves. Comfortable chairs and tables are necessary. Sometimes these are made from orange crates. The articles are painted and decorated in uniform and attractive colors. The chairs may be padded and covered with bright colored cretonnes or oil cloth. The table cover should match the chair covers. Rocking chairs are always popular in the library corner.
5. Bulletin Board. There should be one or more bulletin boards for the library. Displayed on the boards may be:
 - a. Posters and teasers which stimulate curiosity about certain books and a desire to read them
 - b. Book covers of new books
 - c. Charts and records of how many books each pupil or class has read
 - d. Recommendations for other pupils, written by pupils, recommending books they have read
 - e. Maps
 - f. Suggestions for special day reading
 - g. Copies of poems
 - h. Library conduct posters
6. Racks. Picture books, newspapers, and magazines are displayed to better advantage on racks.

SELECTION OF LIBRARY BOOKS

A well-rounded collection of books for the school library should include books for recreational reading, general information, and books concerning school activities and supplementing every subject that is taught.

In building the school library collection, it is important to keep in mind that every book selected should be of actual service to the pupil or teacher for inspiration, information, or recreation. There are two main sections of a school library—the reference section which includes the encyclopedia, dictionary, world almanac, books of facts, as well as periodicals and pamphlets that supplement the reference books; and the recreational and supplementary section which includes books, periodicals, clippings, and picture collections for leisure-time reading, as well as information.

Range in Difficulty

The majority of the books should be of a specific grade level, but some should appeal to slower and some to more advanced pupils. The range in difficulty should be from two grades below to two grades above the group. A wide range of interests makes desirable the purchasing of books covering all fields.

How Books May Be Secured

A school interested in increasing the library collection will use many sources for books. The following are suggestive for securing books or funds: School budget, parent-teacher groups, benefit entertainments, community service clubs, personal gifts from interested patrons, and memorial gifts.

How to Order Books

The necessary items for listing a book order are: author, title, edition, publisher, publisher's address, copyright date, and price. Local book firms and book jobbers' catalogs are sources for this information. Lists of books desired may be sent to the Colorado State Library, 320 Capitol Building, Denver, where the needed information will be supplied and the lists returned. The American Library Association, 520 North Michigan Avenue, Chicago, will also supply information.

Aids in Book Selection

Children's Catalog. 6th ed. New York: H. W. Wilson Company, 1941. (Sold on a service basis in proportion to the size of the school.)

4,200 books listed, selected by experienced children's librarians, giving classification and grade placement, as well as a brief description of the contents of the book. Dependable as a buying guide, and invaluable in cataloging and classifying. Includes books on all subjects as well as recreational reading.

Beust, Nora E. *500 Books for Children*. Office of Education, Bulletin 1939, No. 11. Washington, D. C.: Superintendent of Documents, 1940. 15 cents.

Divided into three parts: Grades 1-3; 4-6; and 7-8. Gives necessary information for purchasing, besides short description of the book.

Oregon State Library. *Books for Elementary Schools*. Salem, Oregon: Oregon State Library, 1940. 40 cents.

Gives standards for elementary school libraries, helps for librarians and teachers, methods of preparing books. "books for the first fifty dollars," books useful for remedial reading, and classified list of books. This is the standard list issued for the elementary schools of Oregon. Excellent.

CLASSIFICATION

Classifying books is merely the grouping of books on similar subjects together on the shelves and giving them some symbol or mark which will indicate to which class they belong.

The classification most commonly used is the Dewey Decimal Classification system, employing numbers. It is based on the division of all knowledge into ten main classes as follows:

000 General works

800 Literature

100 Philosophy

900 History

200 Religion

Each of these classes are
divided:

300 Sociology

600 Useful arts

400 Philology

610 Medicine

500 Science

620 Engineering

600 Useful arts

630 Agriculture, etc.

700 Fine arts

Outline of Classification

This is a short list of the more important and most useful numbers in the Dewey system.

- | | |
|-------------------------------------|---|
| 020 Library science | 612 Sex instruction |
| 170 Conduct of life, morals | 613 General and personal hygiene |
| 220 Bible | 614 Safety, fire prevention |
| 291 Mythology | 621 Communication, radio, telephone |
| 309 Community life | 624 Bridges |
| 332 Money | 629 Aeronautics, automobiles |
| 333 Natural resources, conservation | 630 Agriculture |
| 352 Police | 634 Forestry |
| 353 United States government | 636 Domestic animals, pets |
| 355 Army | 640 Home economics |
| 359 Navy | 680 Handicraft, manual training, woodwork |
| 370 Education | 731 Soap sculpture |
| 371 Occupations | 736 Carving |
| 372 Story telling | 738 Pottery |
| 380 Commerce, transportation | 740 Drawing |
| 383 Postal service, stamps | 750 Painting |
| 385 Railroads | 770 Photography |
| 387 Ships | 780 Music |
| 391 Costume | 790 Amusements |
| 394 Holidays | 791 Moving pictures |
| 395 Etiquet | 792 Theater, marionettes |
| 398 Fairy tales, folklore, legends | 793 Indoor entertainment |
| 420 English language, grammar | 796 Outdoor sports |
| 423 Dictionaries | 810 American literature |
| 500 General science | 811 American poetry |
| 511 Arithmetic | 812 American plays |
| 520 Astronomy, stars | 820 English literature |
| 537 Electricity | 821 English poetry |
| 551 Weather | 822 English plays |
| 582 Trees, shrubs, flowers | 910 Geography and travel |
| 591 Animals—Habits and behavior | 912 Atlases, maps |
| 595 Insects, butterflies, spiders | 914 Europe—Description and travel |
| 597 Fishes, frogs | 915 Asia—Description and travel |
| 598 Birds, reptiles | |
| 608 Inventions | |

- | | |
|--|---|
| 916 Africa—Description and travel | 919 Australia, polar regions—Description and travel |
| 917 North America—Description and travel | 920 Biography |
| 917.2 Mexico—Description and travel | 929 Flags |
| 917.3 United States—Description and travel | 940 European history |
| 918 South America—Description and travel | 950 Asiatic history |
| | 970 North American history |
| | 970.1 Indians |
| | 971 Canadian history |
| | 972 Mexican history |
| | 973 United States history |
- E Easy books (Grades one to three)¹

Biography, 920, is usually used for books containing the lives of several persons, that is, collective biography. Most recently organized libraries use the letter "B" for individual biography plus the first letter of the last name of the *person written about*; thus Wise's biography of Edison would be B. This

E method allows for the shelving of all books about Edison, for instance, together on the shelf regardless of who wrote the book.

Books of fiction should never be classified according to the Dewey system. They should be arranged on the shelves alphabetically by author. The first letter of the author's last name may be lettered on the back for ease in shelving.

Reference books should have the letter R preceding the class number to indicate that the books are kept for reference and are not circulated. A dictionary would be classed R 423.

PREPARING BOOKS FOR USE

As soon as new books have been received, check carefully with the bill and invoice to be sure that all the books have been received.

The life of a book depends greatly on its being opened carefully and properly. Place the book on a table with the back down. Press down the back cover and front cover. Then alternating back and front, firmly crease down a quarter inch of pages by running the fingers, near the inside hinge until all the pages have been done.

Check the leaves of new books, cutting apart the ones which need it with a knife or letter opener.

¹Primary books (grades one to three) are usually not classified according to the outline above, but are marked "E."

Accession Record

For libraries, the accession record is probably the most important record. It is a serial list of all the books as they are received in the library. The first book received or processed is Number 1, etc. The accession record usually includes the author, title, publisher, date, source and price, together with space for recording date lost, withdrawn, discarded, etc. A loose-leaf kind designed for typing has proved the most satisfactory.

Marking the Book

1. Each book should be marked in several places with the name of the library. This should be stamped on the pocket, front and back covers, the center of the title page, and usually one other page in the book, the library selecting a certain page, such as 108, or 53 (called "identification page"), which is always stamped.
2. In addition, each book should have the class number written in ink on the back of the title page, usually on the upper half of the page, not too close to the margins. Below the class number, the first letter of the author's last name should be added. {320} On the lower half of the page, the accession } D { number should be written. Both these numbers should also appear on the "identification page".
3. For ease in shelving, the class number and the author letter, known as the *call number*, should be lettered on the back of the book, a uniform distance from the bottom. Then the entire book should be shellaced with a good grade of white shellac, which protects the cover from soil and moisture.

Preparation for Circulation

1. Paste in the book pocket, preferably in the front.
2. Paste a date due slip in the front of the book opposite the pocket. This should be tipped in by a narrow line of glue at the top, as it is torn out when filled.
3. A book card is kept in the pocket when the book is in the library. The book card contains the following information:

Call number	591	1254	Accession number
	S	Seton	
	C.2 Wild animals I have known		
	Date due	Borrower's name	Room no.

Placing Books on the Shelves

- Books are placed on the shelves regardless of grade placement, under the classification number, beginning with the 000's up through all the 900's. That is, all the books on Social Sciences, 300's, are arranged in numerical order, 309, 332, 333.
- All the books of a given classification are then placed in alphabetical order according to the author's last name.
333 333 333
A D F

THE SHELF LIST

A shelf list consists of a card for each title on the shelf, arranged exactly as the books appear on the shelves, that is, by class number, then alphabetized according to the author's last name within a given class. The shelf list is most important in taking inventory, but also prevents errors in classifying, and shows clearly how many books there are in each class.

Besides the author, title, publisher, and date of the book, the shelf list card gives the accession number, the number of copies, the source of the book and the price.

Shelf List Card

394 Graham, Eleanor A.
G Happy holidays. Dutton, c1933

1174 c.1 Follett \$1.75
2906 c.2 Smith book store \$1.87

THE DICTIONARY CATALOG

It has been found that books in a library are generally asked for either by specific title desired, or other books by the same author, or by the subject matter. Therefore, there are at least three cards made for each book: author card, title card, and subject card. These are arranged alphabetically in one file according to the first letter of the first word on the card, disregarding *a*, *an*, or *the* at the beginning of titles.

Author Card

The author card is just like the shelf list card except that the copy number, source, price, and accession number are omitted.

Author Card

394	Graham, Eleanor A.
G	Happy holidays. Dutton, c1933

Title Card

The title of the book appears on the first line of the card two spaces down from the top, and at the title indention. The rest of the items are identical in wording and placement with the author card. *Note:* In library practice, only the first word of a title is capitalized except proper nouns appearing in the title.

Title Card

	Happy holidays
394	Graham, Eleanor A.
G	Happy holidays. Dutton, c1933

Subject Card

The subject is placed on the first line of the card, two spaces down from the top and twelve spaces from the edge of the card. The rest of the card is identical. Any number of subject cards may be made for a book. Care should be exercised that enough subject cards are made to cover the book without filling the catalog with useless cards.

Subject Card

HOLIDAYS

- 394 Graham, Eleanor A.
G Happy holidays. Dutton, c1933.

Rules for Typing Cards

1. The first line stands three spaces from the top of the card. One space in from the left edge of the card, type the classification number.
2. Below this, type the first letter of the author's last name.
3. Begin the author's last name eight spaces from the left edge of the card (known as the author indention). Follow the author's last name with the first name and middle initial.
4. Twelve spaces from the left edge of the card, type the title of the book below the author's name. This is called the "title indention." Follow this by two spaces, then the publisher's name, a comma and the copyright date, indicated by a small c preceding the date. The latest copyright is always used and is usually found on the back of the title page.

Subject Headings

Subject headings are used for most non-fiction, making more readily available material found in books. It is important that these be consistent and uniform. Through experience one can develop a list of subject headings, but it is much more satisfactory and safer to get a standard list at the beginning.

Smith, Elva S. *Subject Headings for Children's Books*. Chicago: American Library Association, c1933. \$3.25. Made especially for children's departments of public libraries and elementary and junior high school libraries. Includes an introduction on the cataloging of children's books which make the volume well worth the cost.

PICTURES, PAMPHLETS, AND CLIPPINGS

Pictures: Pictures to supplement all subjects may be obtained from discarded books and magazines. Each picture should

be mounted on heavy paper or regular mounting papers in neutral grey or light brown. The mounts should be stamped on the back, and an appropriate subject heading typed or lettered on the front upper left corner.

Pamphlets: Pamphlets filed alphabetically by subject, also marked in the upper left corner can be made accessible for quick reference in a file case or drawer.

Clippings: The clipping file can easily be made a source for informative newspaper and magazine clippings. Each clipping should bear the source and date of the paper or magazine from which it was clipped. Several clippings on the same subject may be mounted on a sheet of brown wrapping paper or typing paper, or pasted on cards of uniform size and filed alphabetically by subject in a file case or drawer. It is important that the same subject headings be used as those for the pictures, pamphlets, and for the book collection.

HOW TO CHECK BOOKS OUT AND IN

Books are checked out by having the pupil write his name and room number on the book card. Then the date the book is due is stamped both on the book card and the date due slip in the book. The book card is kept on file in the library.

When a book is returned, the card is replaced in the pocket and the book is ready for shelving.

The book cards should be counted each evening and the number recorded for circulation records. Then arrange the book cards in the same order as the books appear on the shelf and file behind the date the books are due in the charging tray.

Responsible children in a class may be taught to check books in and out.

LIBRARY INSTRUCTION

To take full advantage of the facilities of the library, organized instruction in the use of the library should be given to all pupils. Library instruction should include:

1. What the library contains: books that can be checked out; books only used for reference; magazines; newspaper and clipping files; bulletin boards; and picture collections.

2. How books are arranged on the shelves (the general classification). It is desirable to have a large reference chart of the most used class numbers posted in the library.
3. The use of the dictionary card catalog: how to use it effectively; how to look at a card without removing it.
4. The make-up of a book: title; author; table of contents; index; chapters.
5. How to locate material in a book.
6. How to care for a book: opening a new book; turning pages; keeping the place; keeping books clean.
7. How to use reference books: dictionary; encyclopedia.
8. How books are checked out and in: rules of the library.

COLORADO STATE LIBRARY

Any citizen of the State of Colorado, schools, clubs, and small community libraries may use the services of the State Library.

Write to or call at the office of the State Library, 320 Capitol Building, Denver, Colorado, for application blanks to obtain the library's services.

The following are loaned for a limited period of time upon signed application:

1. Selection of books suitable for recreational and supplementary reading.
2. Collections of mounted pictures to aid in teaching any subject and for room decoration.

Bibliographies are compiled and supplied for free distribution. Aid and advice is offered in organizing, classifying, cataloging the school library, and in planning equipment. Write to the State Library regarding your library problems.

BIBLIOGRAPHY FOR ORGANIZING THE ELEMENTARY SCHOOL LIBRARY

Currin, Althea M. and Wilson, Martha. *School Library Management*. 6th ed. New York: H. W. Wilson Company, c1939. \$1.25.

Divided into two parts: For the administrator; for the librarian. Besides giving the theory and standards for

school libraries, discusses thoroughly all the details of library operation.

Fargo, Lucile F. *The Program for Elementary School Library Service*. Chicago: American Library Association, 1930. \$2.25.

In addition to giving the historical background of the development of the elementary school library, outlines several different types of school library service.

Miller, Zana K. *How to Organize a Library*. 10th ed. 465 Washington St., Buffalo, New York: Library Bureau Division, Remington Rand Inc., c1939. Free on request.

A short but complete description of the organization processes.

SUGGESTIONS FOR CLASSROOM ORGANIZATION

The modern classroom is a place where teacher and pupils work and play together. The pupils share in planning work, carrying out plans, and evaluating what has been done. The teacher, because of his professional experience and training, is a guide and counselor, working with the children to the end that each may develop to the maximum his potential abilities.

This concept of classroom activity does not mean that the teacher gives up all of his authority to the pupils. It does mean that he uses his authority sparingly and wisely with the ultimate objective of developing in children the ability to direct their own activities, substituting self-control for external control. If this objective is being realized, the children should evidence an ever-growing ability to use freedom wisely.

Children who have been accustomed to external control at home or at school, or both, cannot be suddenly plunged into situations demanding self-direction without disastrous results. Teacher control must be maintained and responsibility for individual and group behavior developed gradually. No teacher should be content to allow a group or an individual to remain dependent entirely upon him for direction and guidance. The purpose of education, in the home, community, and school, is to develop an ever-increasing degree of independence on the part of children both in individual and group living. In other words, the job of parents and teachers is to make themselves dispensable.

No definite rules can be given for effective classroom organization. The following suggestions may prove helpful in guiding the teacher toward that end.

ROUTINE ORGANIZATION

Study the schoolroom situation and plan for effective organization. Let the children discuss how the routine work of the school can best be carried out. Add your suggestions to theirs and draw up a workable plan. Appoint pupils for duties which they can perform. (In the intermediate and upper grades, room officers may make such appointments.) Rotate duties so

that every child has an opportunity to serve. Guide appointments so that children needing certain types of experiences may have them. For example, the timid child may profit from being the room messenger, or the host who greets visitors to the school. Check to see that assigned duties are performed and if some child is negligent, find out why and work out the problem with him.

PLANNED WORK

Plan school work, especially the introduction of new lessons and units, so that the children's interest is aroused. After you have introduced a unit, provide for pupil participation in setting up their objectives, planning how they can best be reached, sharing experiences, and evaluating results. Add your suggestions when necessary.

SCHOOL PROBLEMS

Provide opportunities for the children to discuss the problems which arise in living together. Let them work out the solution to these problems under your guidance. Children will set up reasonable standards for conduct in the building, on the playground, etc., if given the opportunity under teacher direction. Such standards should not be regarded as rules, but as goals which the children are striving to reach. (Many schools find the Colorado Young Citizens League organization an effective way of providing opportunities for group action on school problems.)

FIRE DRILLS

There are some phases of school organization in which pupils can have less part in planning. School board, police, and fire regulations fall in this category. In these we have an excellent opportunity to lead children to see that in some things rules are necessary for our safety and to protect our rights and rights of others. These rules are made by people elected by us, or appointed by those elected by us, to help in maintaining a well ordered community. Such rules should be discussed and the reasons for them explained.

Fire and emergency drills are necessary in most schools and should be carefully planned and practiced. Early in September all pupils should be instructed as to the procedures to be followed in fire drills. The reasons for these procedures and suggestions as to how they may best be carried out should be discussed.

Drills should be held frequently until the system is working smoothly, and about once a month thereafter.

Suggestions for Fire Drills

Plan for Fire Drill

Work out a plan suited to your school situation, including:

1. Fire signal, used exclusively for that purpose.
2. Exits to be used, rooms to use them, and routes by which they are to be reached.
3. Provision for someone to hold doors open until building is cleared. (Not necessary if doors stay open by themselves.)
4. Provision for someone to check room to see if everyone is out.
5. Where groups are to go after leaving building. (Safe distance from building and away from fire plugs and apparatus.)
6. Provision for definite formation to be held by pupils at their place outside the building.

Conduct of Pupils During Fire Drill

Children should realize that fire drill is serious business. There is no place for laughing, joking, or talking. Movement should be rapid without running. The objective is to empty the building *quickly* and *safely*.

Safety Precautions

1. Each room should have two exits.
2. All doors should open out and should be kept in good working order.
3. Exits, halls, and stairways should be kept clear of obstructions at all times.

EMOTIONAL BALANCE OF CHILDREN

The purpose of this section is to develop in teachers an awareness of the part emotion plays in the balanced growth of children and to suggest some helpful measures for maintenance of balance. There is no formula that can be used in the treatment of any two cases even though they seem almost identical in behavior. The causes may be far from identical, and upon the discovery of the cause depends the specific treatment. Adjusting for emotional balance depends upon:

1. Early discovery of the difficulty
2. Recognition of the significance of such behavior on the present and future life of the child
3. Tracing the difficulty to the real rather than the apparent cause
4. Providing for particular adjustment measures

Emotional balance cannot be separated from such influence as mental and physical health, and home and school conditions. Every influence that affects the life of the child has a definite relationship to his emotional life.

ANALYSIS OF CAUSES

Any child who deviates conspicuously in any one of many ways from the accepted average or normal idea is in danger of becoming an emotional case; and, without intelligent handling, may subsequently become an emotional problem. Even though the deviation has been carefully and intelligently handled at home, an additional adjustment is necessary at school. A few of these deviations which cause emotional disturbances are:

1. Physical: Defective hearing, defective sight, unusual size for age, defective speech organs, frequent or long illness, bodily malformation or lost usage of some part of the body
2. Mental: Very high or very low intelligence
3. Special talents in some one field, such as: Unusual talent in music, art, dramatics, etc.
4. Environmental: Unusual wealth or poverty; home broken by divorce; only child in the home; one of an unusually large family; member of minority group, race, or sect;

unusual relationships within the home, such as autocratic discipline, over-protection of child, unwanted or rejected child, lack of affection, etc.

5. School maladjustment: Repeaters, advanced beyond social-age level, bi-lingual
6. Adult contacts: Association with adults who have themselves definite emotional problems

It is dangerous to accept such deviations as final and to believe that nothing can be done about them. Because of these deviations the child may not get normal satisfactions. Satisfactions are the direct result of allowing for expression of certain urges. There are certain fundamental urges common to all children. These urges are:

1. To be physically and mentally active
2. To have contact with reality through rich and varied experience
3. To accomplish purposes
4. To be approved by others
5. To be like other children
6. To belong to a group
7. To love and to be loved
8. To have increasing self-direction
9. To become an individual

RESULTS OF EMOTIONAL STRAIN

Children continually thwarted in these urges are under an emotional strain which may cause:

1. Interrupted digestion
2. Imperfect sleep
3. Inadequate circulation
4. Marked fatigue
5. Complete collapse
6. Anxiety attacks
7. Difficulty in keeping sustained attention
8. Irritability
9. Moodiness
10. Stammering and stuttering
11. Excessive fear

12. Nightmares and night terrors

Because of these thwarted urges a child attempts to compensate by using one of the following forms of adjustment:

1. Day dreaming
2. Temper outbursts
3. Rationalization, such as continually excusing himself, shifting the blame to another, insisting that the thing desired was not worth while after all
4. Overcompensation, such as showing off, joining everything possible, attempting to "be in" everything, excessive docility and submissiveness
5. Retaliation, such as getting even, bullying, underhanded "paying back"
6. Withdrawal symptoms such as shyness, timidity, secretiveness, avoidance of contact with others, etc.
7. Utter disregard of self—lives in others
8. Procrastination

SUGGESTED HELPS FOR THE TEACHER

No behavior is incidental or accidental. It is used because it has been built up in terms of satisfaction. Children resort to temper tantrums, pouting, bullying, mutilation, "baby" patterns of behavior, and the like, because these have been used and worked successfully in attaining desired ends. The teacher's problem is to carefully substitute right or accepted behavior for the old without punishing or attaching undue importance to the old. The new pattern of behavior will be established when it results in the satisfaction of some of the dominant urges and brings security to the child.

Some cases of emotional disturbances are extremely obvious. Others, just as important, must be discovered and corrected. Temper tantrums are obvious. Continued disregard for an unattractive or shy child who is wishing to be chosen to pass the paper, to be in a play, to sing in a group, etc., shows only in a disappointed look and yet may develop gradually into an emotional problem of sullenness and social hatred or lack of self-respect. A maladjusted child who resorts to day dreaming often causes no social difficulty at all, and yet is a particularly difficult emotional case. On emotional balance depends health, happiness, and progress of the child. It is one important key to

discipline and character education. It is dangerous to trust that incorrect behavior will be "outgrown".

The following are some measures suggested to the teacher as ways of handling some emotional difficulties:

1. Study each child as an individual in relation to himself and his own progress. Study the home situation through visits, parent conferences, talks with the child, etc., so that any unusual attitude of the parents toward the child may be discovered and changed. Show the parents what they are doing to a child who seems unwanted, has too little or too much affection, is not allowed to grow up, is compared unfavorably with other children, or has clothing quite different from the others in his group.
2. Analyze the difficulty accurately.
3. Discover the real basis for wrong adjustment rather than the apparent reason.
4. Without making the difficulty take on further or undue importance in the mind of the child, decide what is best to do to help and strive to change the pattern of the behavior.
5. Do what is possible to have physical defects corrected.
6. Make the school room a place of quiet security.
7. Keep the classroom sunny, cheerful, and full of color; make it a happy center of many worth-while interests.
8. Arrange for several short (two or three minutes) rest periods a day, preferably managed so that there are alternate periods of physical activity and rest. Have a quiet period following luncheon. These may come after recess in the morning, directly after the noon play period, and after recess in the afternoon. Shaded windows and quiet music make these relaxation periods more restful.
9. Be sensitive to children's immediate needs, as shown by distressed looks, undue physical movement, fatigue, etc.
10. Avoid undue excitement. Emotional excitement tends to make tense, abnormal children.
11. When no other child is present, establish a pleasant child-teacher, personal relationship with the child having the difficulty. Give him affection if he needs it.

12. Be sympathetic with the child, and let him realize that you are.
13. Have time to listen to children's interests. Important to them are such things as a new baby brother, a new pet, an aunt's visit, a recent picture show, a new pair of shoes, etc. The hour before school, if the teacher plans to be free, is valuable for this purpose.
14. Help new children to make pleasant and easy adjustment to a new school situation. Aid the child in becoming part of the group, i.e., put a shy child with a small group of children where he can be a leader.
15. Find some good points about every child; call attention to them, securing for him the approval of the group.
16. Be tolerant of "childishness" in the child and do not expect the conduct of maturity.
17. Avoid all ridicule, shaming, sarcasm, humiliation, and punishment of any sort especially in the presence of other children.
18. Discuss serious difficulties of individual children in personal conference rather than before the group.
19. Learn to build up in children self-control through self-discipline rather than have the control come through punishment. Allow the child as much responsibility for his own decisions as he is able to take.
20. Avoid over-emphasis on speed tests. Children work their best at their own rate. This in no way implies or suggests wasting time.
21. Avoid over-emphasis on the importance of grades. Adjust the work carefully to the child's abilities so that he has a fair balance of success and failure, probably much success is needed at first.
22. Use honest praise freely.
23. Through explanation and interpretation help the child to understand the world inside himself as well as his external world. Knowledge of self (insight) is just as important in education as knowledge of the environment (outlook) and is much more difficult to achieve.

THE DAILY SCHEDULE

It is extremely important that the teacher, before or at the opening of school, prepare a daily schedule. This first schedule to be made will undoubtedly be changed many times before a satisfactory one is found. Even then the schedule should not be considered as a fixed program which must be rigidly followed, but rather as a guide, which can be modified to meet the unusual situations which may arise.

All of the school day should not be devoted to meeting with groups. There should be supervised work periods during which the teacher is free to work with individual pupils. The division of time between meeting with groups and supervising work periods will depend in part upon the subjects being taught. For example, the social studies call for much group discussion, while most of the arithmetic can be most efficiently taught through working with individuals and small groups. Perhaps one period a week should be given to a "socialized arithmetic" class in which problems arising at home and at school are brought in to be discussed and solved. Several grades may participate in this type of work.

The sample schedules for various types of schools which follow may help the teacher in making his daily program. It must be remembered that a ready made schedule cannot be used without adaptations to the situation in which it is to function. The teacher will, therefore, find it necessary to work out his schedule in more detail than is suggested in the sample schedules which provide only the framework.

DAILY SCHEDULE FOR A ONE TEACHER SCHOOL

One of the biggest problems confronting the teacher of the one room school is that of building a daily schedule which will provide adequate time for effective learning. Building background, stimulating interest, encouraging pupil participation in planning work, getting and sharing information, carrying out activities, and evaluating work done, are all necessary if pupil growth is to be furthered. These things require time—they can not be done in ten-minute periods. Furthermore, in most small

schools, class groups need to be larger than a single grade in order to have interesting group discussions and to provide socializing experiences which the one- or two-pupil class does not afford.

Before the teacher can build a good daily schedule for the one room school, he must get rid of the idea that he must meet each class in each subject every day. Furthermore, he must realize that in some fields, individual and small group work is more effective than whole class discussion.

Each section of this course of study has a part called "Suggested Adaptations of This Program to Schools Having Several Grades Taught by One Teacher" in which ways of avoiding an over-crowded daily program are presented. The teacher, in making his schedule, should consult this part of each section.

Explanation of Schedule for a One Room School

The schedule on page 704 is built on the idea of blocking out fairly large periods of time for each major area of the school curriculum. Some of these major areas will need to be broken down before a workable plan can be achieved. It is impossible to draw up such a plan which will fit all one room school situations. In the discussion which follows, an attempt is made to point out the possibilities of using this schedule as a framework for the more detailed schedule the teacher must prepare.

Opening Exercises—9:00 to 9:15

This period may be used for group singing, a brief discussion of current happenings, and other activities of an informal nature to start off the day in a cheerful manner; health inspection; and planning of the day's work.

Reading—9:15-10:00

The first grade will need much individual attention, especially at the beginning of school. The teacher will need to meet with the first, and probably the second grade, each day. Seat work, games, construction activities, art work, etc., will need to be provided to keep the first grade, and to some extent the second grade, busy while the teacher works with other grades.

SAMPLE DAILY SCHEDULE FOR A ONE TEACHER SCHOOL

Time	Grade One	Grade Two	Grade Three	Grade Four	Grade Five	Grade Six	Grade Seven	Grade Eight
9:00	Opening Exercises—Inspection—Planning Day's Work							
9:15	Reading and Seatwork	Reading and Seatwork	Reading—Grades or Ability Groups					
10:00	Intermission Composition		Composition	Composition		Composition		
10:30	Handwriting—Supervised Practice Period							
10:45	Intermission—Free Play							
11:00	Spelling—Grades or Ability Groups							
11:15	Number Experiences May Be Dismissed Early	Number Experiences	Arithmetic—Small Group and Individual Work					
12:00	Noon—Lunch—Free Play							
1:00	Science and Health Units		Science and Health Units			Science and Health Units		
1:30	Social Studies Units		Social Studies Units			Social Studies Units		
2:00	Reading	Reading	Social Studies Units					
2:30	Physical Education—Directed Play							
3:00	Music—Monday and Wednesday		Art—Tuesday and Thursday		Free Activity—Friday			
3:30	May Be Dismissed Early	Literature—Free Reading	Mon. Tue. Wed. Thurs.	Free Activity—Friday				

It is not necessary or desirable to have a reading class each day for each of the remaining grades; however, the third grade will need more attention than the fourth, and so on up through the grades. The teacher will need to arrange the work so that one day he introduces lessons in reading in one or two grades, which require more than one period to prepare. The next day new lessons may be introduced in other grades. By that time the groups to whom the lessons were first introduced may be ready for discussion and check up on written work.

Although each class need not meet every day, the teacher should give some attention to each class. That is, he should see that each group understands what it is to do and that progress is being made. This procedure should help to satisfy parents who feel that the teacher should have a recitation for each class in each subject every day. The teacher can explain that he devotes some time to each class each day, the amount varying according to the needs of the class on any particular day.

There should be some time during the reading period when no groups are meeting and the teacher is free to work with individuals needing special help.

Ability grouping in reading is preferable to grade grouping but is not always possible due to lack of suitable materials or parental opposition. Under the ability grouping plan children of about equal reading ability work together and are provided with reading materials on their level of ability. See State Department of Education Curriculum Bulletin, *Adapting the Reading Program to the Needs of the Individual Child*, for a more complete description of this plan.

There are many types of reading lessons described in the section on "Reading" in this course of study. Different types of lessons require differing amounts of time to complete so one could not follow rigidly a schedule calling for the meeting of a given class at definitely stated intervals. There are also certain types of reading lessons in which two or more grades might be grouped. Learning to use the encyclopedia is an example of a type of lesson in which several grades can work together.

Composition 10:00-10:30

The schedule calls for combining two grades for work in composition. This grouping should not be rigidly followed as there are occasions when more than two grades can be combined, and others where each grade should meet separately.

Letter writing, story writing, and story telling, reports, etc., are activities in which several or all grades may engage, the quality of work expected depending on the ability of each individual. Several grades can be combined for review work in capitalization, punctuation, grammar, etc. On the other hand, new work in grammar should perhaps be presented separately to each grade.

Handwriting—10:30-10:45

For all grades except the first this is an individualized period, each child working to improve his own handwriting and the teacher giving help where needed. The first grade may be kept together as a group, but only a part of the teacher's time need be given to them. If manuscript writing is taught in the first and second grades, a special group will need to be formed when cursive writing is introduced. Interest in writing can be maintained by providing means for frequently showing children the progress they are making. Suggestions for doing this are given in the section on "Handwriting".

Intermission—10:45-11:00

This is not a physical education period, but is for the purpose of providing a break in the morning's work and opportunity to take care of physical needs. There will be time for some play which may be of the free type.

Spelling—11:00-11:15

Dictation of words may be arranged so that not all grades have dictation on the same day; or all may have dictation on the same day by using the better spellers to dictate to some of the groups. Pupils who need more study time than this fifteen minute period provides may find extra time for study during other parts of the day.

Grouping pupils on the basis of spelling ability is preferable to adhering to grade lines. Thus poor spellers may study words from a lower grade list instead of those of their own grade. Sampling tests of from fifty to one hundred words chosen at random from the year's list and given at the beginning of the year form an excellent basis for grouping pupils for spelling. These tests can be repeated at the end of the year as a means of measuring progress.

Arithmetic—11:15-12:00

In this course of study, the first and second grade program is devoted to giving children a wide variety of experiences with number. This calls for group work and activities in which both grades may frequently participate. Number seat work, of the kind which aids in development of number understandings, should be used. While first and second grades are engaged in seat work activities of this type, the teacher can be free to work with the upper grades. It is also suggested that the first and second grades be dismissed early for the noon period, which provides added opportunity for work with the remaining pupils.

From the third grade on it is recommended that the arithmetic period be a supervised work period in which pupils are able to progress at their own rates. A great deal of this work will be individual, but small groups may be formed of those who are ready or about ready to take up a new process and those experiencing similar difficulties. Such groupings may change from time to time as some individuals forge ahead of others and as the kinds of difficulties vary.

An arithmetic period of this kind requires careful planning on the part of the teacher. Frequent checking will be necessary to see that pupils understand what they are doing and are making progress. Washburne's book, *Adjusting the School to the Child*, which is listed in the "Bibliography for Teachers" at the end of the "Arithmetic" section contains helpful suggestions on this type of program.

An occasional socialized arithmetic period, in which several or all grades participate, is recommended.

Noon Period—12:00-1:00

The lunch period provides opportunities for practicing health habits, table manners, and conversation which should not be overlooked. It is suggested that the teacher and group eat together and that a time limit of at least twenty minutes be set for eating. The remainder of the noon hour may be used for free play. The teacher should be with the children as much as possible during this time as many of the best opportunities for knowing them and for guidance may come in the informal atmosphere of the playground.

Science and Health—1:00-1:30

The course of study in science and health is readily adaptable to groupings composed of several grades. The grouping in this schedule merely suggests one possibility.

Social Studies—1:30-2:30

A half hour is provided for social studies for grades one and two and an hour for the remaining grades. The remainder of the hour in grades one and two is given to reading.

The course in social studies combines history, geography and civics into one program, thus reducing the number of classes. If the plan of combining grades and alternating years, recommended in the social studies course, is followed, a further reduction in the number of classes will be accomplished.

Even with these aids the teacher will still find it inadvisable to attempt to meet each group each day, although each group should have some daily attention. Many of the suggestions given in this section for organizing the work in reading apply also to the social studies.

Physical Education—2:30-3:00

This is the period in which instruction in physical education is given. Age groups may be formed for a part of the program and some activities should be used in which all may take part. If a good program in physical education is carried out during this half hour, we may consider the time well spent. In bad weather, a short period for exercises may be used, with windows open, followed by various indoor games. It is fully as important that children learn and enjoy a variety of indoor games as it is that they learn and enjoy games which are played out of doors.

Music—3:00-3:30—Monday and Wednesday

Much of the music program may be carried out with the whole school as the group. Part of the time it may be desirable to divide into primary and upper grade groups for music.

Art—3:00-3:30—Tuesday and Thursday

Here again grade lines can be disregarded and the whole school work together. Art activities growing out of the social studies may occasionally be begun in the social studies period

on Tuesdays and Thursdays and carried on through the art period.

Literature—3:30-4:00

It is recommended that this be largely a time for free reading of library books of the child's choosing. Occasionally it may be used for reading to the children by the teacher or by other children, for a discussion of books read, and the like.

Free Activity—3:00-4:00—Friday

The free activity period may be used for a number of things such as Young Citizens League meetings, informal programs, and interest activities where children work in small groups on the things they wish to do—art, crafts, dramatizations, etc.

The teacher is the most important factor in making this schedule work in a one room school. The more grades he has, the more difficult his problem. At best, effective teaching in such situations, calls for all of the resourcefulness and ingenuity which the teacher can command.

DAILY SCHEDULES FOR A TWO TEACHER SCHOOL

Two sample schedules are given, one for grades one through four and the other for grades five through eight. These schedules are built on the same principles as the "Sample Schedule For a One Teacher School" and the suggestions given concerning the use of that schedule apply to the use of the schedules for a two teacher school.

Teachers having two or three grades in a room, can, using the schedules given for one and two teacher schools, build similar schedules to fit their particular situations.

SAMPLE DAILY SCHEDULE FOR A TWO TEACHER SCHOOL Grades One Through Four

Time	Grade One	Grade Two	Grade Three	Grade Four
9:00	Opening Exercises—Inspection—Planning Day's Work			
9:15	Reading and Seatwork	Reading and Seatwork	Reading—Grades or Ability Groups	
10:00	Intermission Composition		Composition	
10:30	Handwriting—Supervised Practice Period			
10:45	Intermission—Free Play			
11:00	Spelling—Grades or Ability Groups			
11:15	Number Experiences May Be Dismissed Early	Number Experiences	Arithmetic—Small Group and Individual Work	
12:00	Noon—Lunch—Free Play			
1:00	Science and Health Units		Science and Health Units	
1:30	Social Studies Units		Social Studies Units	
2:00	Reading	Reading		
2:30	Physical Education—Directed Play			
3:00	Music—Monday and Wednesday Art—Tuesday and Thursday		Free Activity—Friday	
3:30	May Be Dismissed Early		Literature—Free Reading—Mon. Tue. Wed. Thurs. Free Activity—Friday	

SAMPLE DAILY SCHEDULE FOR A TWO TEACHER SCHOOL Grades Five Through Eight

Time	Grade Five	Grade Six	Grade Seven	Grade Eight
9:00	Opening Exercises—Planning Day's Work			
9:15	Reading—Grades or Ability Groups			
10:00	Composition	Composition		
10:30	Handwriting—Supervised Practice Period			
10:45	Intermission—Free Play			
11:00	Spelling—Grade or Ability Groups			
11:15	Arithmetic—Small Group and Individual Work			
12:00	Noon—Lunch—Free Play			
1:00	Science and Health Units	Science and Health Units		
1:30	Social Studies Units	Social Studies Units		
2:30	Physical Education—Directed Play			
3:00	Music—Monday and Wednesday	Art—Tuesday and Thursday	Free Activity—Friday	
3:30	Literature—Free Reading—Mon. Tue. Wed. Thurs.	Free Activity—Friday		

INFORMATION ON THE NATIONAL AND STATE SONG, FLOWER, AND BIRD

THE NATIONAL FLAG

Description of the Flag

The Flag of the United States of America has 13 horizontal stripes—7 red and 6 white—the red and white stripes alternating, and a union which consists of white stars of five points on a blue field placed in the upper quarter next the staff and extending to the lower edge of the fourth red stripe from the top. The number of stars is the same as the number of States in the Union. The canton or union now contains 48 stars arranged in six horizontal and eight vertical rows, each star with one point upward. On the admission of a State into the Union a star will be added to the union of the Flag, and such addition will take effect on the 4th day of July next succeeding such admission.

The star which stands for Colorado is the thirty-eighth star, the sixth from the left in the fifth row.

History of the Flag

The United States Flag is the third oldest of the National Standards of the world; older than the Union Jack of Britain or the Tricolor of France.

The Flag was first authorized by Congress June 14, 1777. This date is now observed as Flag Day throughout America.

The Flag was first flown from Fort Stanwix, on the site of the present city of Rome, New York, on August 3, 1777. It was first under fire three days later in the battle of Oriskany, August 6, 1777.

It was first decreed that there should be a star and stripe for each state, making thirteen of both; for the states at that time had just been erected from the original thirteen colonies.

The colors of the Flag may be thus explained: The red is for valor, zeal, and fervency; the white for hope, purity, cleanliness of life, and rectitude of conduct; the blue, the color of heaven, for reverence to God, loyalty, sincerity, justice, and truth.

The star (an ancient symbol of India, Persia, and Egypt) symbolizes dominion and sovereignty, as well as lofty aspiration.

The constellation of the stars within the union, one star for each state, is emblematic of our Federal Constitution, which reserves to the States their individual sovereignty except as to rights delegated by them to the Federal Government.

The symbolism of the Flag was thus interpreted by Washington: "We take the stars from Heaven, the red from our mother country, separating it by white stripes, thus showing that we have separated from her, and the white stripes shall go down to posterity representing Liberty."

In 1794, Vermont and Kentucky were admitted to the Union and the number of stars and stripes was raised to fifteen in correspondence. As other states came into the Union, it became evident there would be too many stripes. So in 1818 Congress enacted that the number of stripes be reduced and restricted henceforth to thirteen, representing the thirteen original states; while a star should be added for each succeeding state. That law is the law of today.

The name "Old Glory" was given to our National Flag August 10, 1831, by Capt. William Driver of the brig, Charles Doggett.

The Flag was first carried in battle at the Brandywine, September 11, 1777. It first flew over foreign territory January 28, 1778, at Nassau, Bahama Islands; Fort Nassau having been captured by the Americans in the course of the war for independence. The first foreign salute to the Flag was rendered by the French Admiral LaMotte Piquet off Quiberon Bay, February 13, 1778.

The United States Flag is unique in the deep and noble significance of its message to the entire world, a message of national independence, of individual liberty, of idealism, of patriotism.

It symbolizes national independence of popular sovereignty. It is not the Flag of a reigning family or royal house, but of a hundred million free people welded into a Nation, one and inseparable, united not only by community of interest but by vital unity of sentiment and purpose; a nation distinguished for the clear individual conception of its citizens alike of their duties and their privileges, their obligations and their rights.

It incarnates for all mankind the spirit of Liberty and the glorious ideal of human Freedom; not the freedom of unrestraint or the liberty of license, but an unique ideal of equal opportunity for life, liberty and the pursuit of happiness, safeguarded by the

stern and lofty principles of duty, of righteousness and of justice, and attainable by obedience to self-imposed laws.

Floating from the lofty pinnacle of American idealism, it is a beacon of enduring hope, like the famous Bartholdi Statue of Liberty enlightening the world to the oppressed of all lands. It floats over a wondrous assemblage of people from every racial stock of the earth whose united hearts constitute an indivisible and invincible force for the defense and succor of the down-trodden.

It embodies the essence of patriotism. Its spirit is the spirit of the American nation. Its history is the history of the American people. Emblazoned upon its folds in letters of living light are the names and fame of our heroic dead, the Fathers of the Republic who devoted upon its altars their lives, their fortunes and their sacred honor. Twice told tales of national honor and glory cluster thickly about it. Ever victorious, it has emerged triumphant from eight great national conflicts. It flew at Saratoga, at Yorktown, at Palo Alto, at Gettysburg, at Manila Bay, at Chateau-Thierry. It bears witness to the immense expansion of our national boundaries, the development of our national resources, and the splendid structure of our civilization. It prophesies the triumph of popular government, of civic and religious liberty, and of national righteousness throughout the world.

The Flag first rose over thirteen states along the Atlantic seaboard, with a population of some three million people. Today it flies over forty-eight states, extending across the continent, and over great islands of two oceans; and one hundred thirty millions owe it allegiance. It has been brought to this proud position by love and sacrifice. Citizens have advanced it and heroes have died for it. It is the sign made visible of the strong spirit that has brought liberty and prosperity to the people of America. It is the Flag of all of us alike. Let us accord it honor and loyalty.

Display and Use of the Flag¹

JOINT RESOLUTION

To codify and emphasize existing rules and customs pertaining to the display and use of the flag of the United States of America.

¹Quoted complete from House Joint Resolution 303, known as the Flag bill, passed by Congress and signed by President Roosevelt on June 22, 1942.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the following codification of existing rules and customs pertaining to the display and use of the flag of the United States of America be, and it is hereby, established for the use of such civilians or civilian groups or organizations as may not be required to conform with regulations promulgated by one or more executive departments of the Government of the United States.

Sec. 2 (a). It is the universal custom to display the flag only from sunrise to sunset on buildings and on stationary flag-staffs in the open. However, the flag may be displayed at night upon special occasions when it is desired to produce a patriotic effect.

(b) The flag should be hoisted briskly and lowered ceremoniously.

(c) The flag should not be displayed on days when the weather is inclement.

(d) The flag should be displayed on all days when the weather permits, especially on New Year's Day, January 1; Inauguration Day, January 20; Lincoln's Birthday, February 12; Washington's Birthday, February 22; Army Day, April 6; Easter Sunday (variable); Mother's Day, second Sunday in May; Memorial Day (half staff until noon), May 30; Flag Day, June 14; Independence Day, July 4; Labor Day, first Monday in September; Constitution Day, September 17; Columbus Day, October 12; Navy Day, October 27; Armistice Day, November 11; Thanksgiving Day, last Thursday in November; Christmas Day, December 25; such other days as may be proclaimed by the President of the United States; the birthdays of States (dates of admission); and on State holidays.

(e) The flag should be displayed daily, weather permitting, on or near the main administration building of every public institution.

(f) The flag should be displayed in or near every polling place on election days.

(g) The flag should be displayed during school days in or near every schoolhouse.

Sec. 3. That the flag, when carried in a procession with another flag or flags, should be either on the marching right; that

is, the flag's own right, or, if there is a line of other flags, in front of the center of that line.

(a) The flag should not be displayed on a float in a parade except from a staff or as provided in subsection (i).

(b) The flag should not be draped over the hood, top, sides, or back of a vehicle or of a railroad train or a boat. When the flag is displayed on a motorcar, the staff shall be fixed firmly to the chassis or clamped to the radiator cap.

(c) No other flag or pennant should be placed above or, if on the same level, to the right of the flag of the United States of America, except during church services conducted by naval chaplains at sea, when the church pennant may be flown above the flag during church services for the personnel of the Navy.

(d) The flag of the United States of America, when it is displayed with another flag against a wall from crossed staffs, should be on the right, the flag's own right, and its staff should be in front of the staff of the other flag.

(e) The flag of the United States of America should be at the center and at the highest point of the group when a number of flags of States or localities or pennants of societies are grouped and displayed from staffs.

(f) When flags of States, cities, or localities, or pennants of societies are flown on the same halyard with the flag of the United States, the latter should always be at the peak. When the flags are flown from adjacent staffs, the flag of the United States should be hoisted first and lowered last. No such flag or pennant may be placed above the flag of the United States or to the right of the flag of the United States.

(g) When flags of two or more nations are displayed, they are to be flown from separate staffs of the same height. The flags should be of approximately equal size. International usage forbids the display of the flag of one nation above that of another nation in time of peace.

(h) When the flag of the United States is displayed from a staff projecting horizontally or at an angle from the window sill, balcony, or front of a building, the union of the flag should be placed at the peak of the staff unless the flag is at half staff. When the flag is suspended over a sidewalk from a rope extending from a house to a pole at the edge of the sidewalk, the flag should be hoisted out, union first, from the building.

(i) When the flag is displayed otherwise than by being flown from a staff, it should be displayed flat, whether indoors or out. When displayed either horizontally or vertically against a wall, the union should be uppermost and to the flag's own right; that is, to the observer's left. When displayed in a window, the flag should be displayed in the same way; that is, with the union or blue field to the left of the observer in the street.

(j) When the flag is displayed over the middle of the street, it should be suspended vertically with the union to the north in an east and west street or to the east in a north and south street.

(k) When used on a speaker's platform, the flag, if displayed flat, should be displayed above and behind the speaker. When displayed from a staff in a church or public auditorium, if it is displayed in the chancel of a church, or on the speaker's platform in a public auditorium, the flag should occupy the position of honor and be placed at the clergyman's or speaker's right as he faces the congregation or audience. Any other flag so displayed in the chancel or on the platform should be placed at the clergyman's or speaker's left as he faces the congregation or audience. But when the flag is displayed from a staff in a church or public auditorium elsewhere than in the chancel or on the platform it shall be placed in the position of honor at the right of the congregation or audience as they face the chancel or platform. Any other flag so displayed should be placed on the left of the congregation or audience as they face the chancel or platform.

(l) The flag should form a distinctive feature of the ceremony of unveiling a statue or monument, but it should never be used as the covering for the statue or monument.

(m) The flag, when flown at half staff, should be first hoisted to the peak for an instant and then lowered to the half-staff position. The flag should be again raised to the peak before it is lowered for the day. By "half staff" is meant hauling the flag to one-half the distance between the top and bottom of the staff. Crepe streamers may be affixed to spear heads or flagstaves in a parade only by order of the President of the United States.

(n) When the flag is used to cover a casket, it should be so placed that the union is at the head and over the left shoulder.

The flag should not be lowered into the grave or allowed to touch the ground.

Sec. 4. That no disrespect should be shown to the flag of the United States of America; the flag should not be dipped to any person or thing. Regimental colors, State flags, and organization or institutional flags are to be dipped as a mark of honor.

(a) The flag should never be displayed with the union down save as a signal of dire distress.

(b) The flag should never touch anything beneath it, such as the ground, the floor, water, or merchandise.

(c) The flag should never be carried flat or horizontally, but always aloft and free.

(d) The flag should never be used as drapery of any sort whatsoever, never festooned, drawn back, nor up, in folds, but always allowed to fall free. Bunting of blue, white, and red, always arranged with the blue above, the white in the middle, and the red below, should be used for covering a speaker's desk, draping the front of a platform, and for decoration in general.

(e) The flag should never be fastened, displayed, used, or stored in such a manner as will permit it to be easily torn, soiled, or damaged in any way.

(f) The flag should never be used as a covering for a ceiling.

(g) The flag should never have placed upon it, nor on part of it, nor attached to it any mark, insignia, letter, word, figure, design, picture, or drawing of any nature.

(h) The flag should never be used as a receptacle for receiving, holding, carrying, or delivering anything.

(i) The flag should never be used for advertising purposes in any manner whatsoever. It should not be embroidered on such articles as cushions or handkerchiefs and the like, printed or otherwise impressed on paper napkins or boxes or anything that is designed for temporary use and discard; or used as any portion of a costume or athletic uniform. Advertising signs should not be fastened to a staff or halyard from which the flag is flown.

(j) The flag, when it is in such condition that it is no longer a fitting emblem for display, should be destroyed in a dignified way, preferably by burning.

Sec. 5. That during the ceremony of hoisting or lowering the flag or when the flag is passing in a parade or in a review, all persons present should face the flag, stand at attention, and salute. Those present in uniform should render the right-hand salute. When not in uniform men should remove the headdress with the right hand holding it at the left shoulder, the hand being over the heart. Men without hats merely stand at attention. Women should salute by placing the right hand over the heart. The salute to the flag in the moving column should be rendered at the moment the flag passes.

Sec. 6. That when the national anthem is played and the flag is not displayed, all present should stand and face toward the music. Those in uniform should salute at the first note of the anthem, retaining this position until the last note. All others should stand at attention, men removing the headdress. When the flag is displayed, the salute to the flag should be given.

Sec. 7. That the pledge of allegiance to the flag, "I pledge allegiance to the flag of the United States of America and to the Republic for which it stands, one Nation indivisible, with liberty and justice for all", be rendered by standing with the right hand over the heart; extending the right hand, palm upward, toward the flag at the words "to the flag" and holding this position until the end, when the hand drops to the side. However, civilians will always show full respect to the flag when the pledge is given by merely standing at attention, men removing the headdress. Persons in uniform shall render the military salute.

Sec. 8. Any rule or custom pertaining to the display of the flag of the United States of America, set forth herein, may be altered, modified, or repealed, or additional rules with respect thereto may be prescribed, by the Commander in Chief of the Army and Navy of the United States, whenever he deems it to be appropriate or desirable; and any such alteration or additional rule shall be set forth in a proclamation.

Suggestions for Organization of a Color Guard

Since there are no officially adopted procedures, the following are suggestions. Respect, uniformity, and simplicity are goals in such an activity.

Members

The number of members of a Color Guard is not fixed. The

members should, however, be honor appointments made by the school's staff. Appointing a Color Guard is recommended, but they may be elected by the students. They should be selected on merits of character, leadership, and appearance. Either boys or girls may be chosen. Usually an uneven number makes up the Guard, one, three, five, seven, etc., and designated as follows:

One.....	Color Bearer
Three.....	Color Bearer Two Junior Color Bearers
Five.....	Senior Color Bearer Two Junior Color Bearers Two Guards
Seven.....	Senior Color Bearer Two Junior Color Bearers Four Guards

Procedure in a Building

1. The audience group is already assembled.
2. The Color Guard forms at the back of the room, or outside the room, and advances down the aisle toward the front of the room or stage. The Color Bearer carries the Flag on a staff held in front of him and the guards. The entire Color Guard advances shoulder to shoulder if possible. The audience rises and stands at attention. By "at attention" is meant: erect, on both feet, hands at sides, facing front.
3. The Color Guard marches to a position facing the audience.
4. All the Color Guard except Color Bearer turns to face the Flag.
5. The Color Bearer says, "Citizens—the Pledge to the Flag." He then begins to say the pledge while others join. All give the pledge to the Flag.
6. Color Bearer places the Flag in the staff holder, to left of stage, as the audience faces the stage.
7. Audience and Color Guard are seated.
8. If the Flag is stationary in the room, the Color Guard may advance to a position beneath the Flag and facing the audience. The audience stands at attention. The pledge to the Flag is given. The audience and Color Guard are seated.

Procedure Out of Doors

When the Flag is raised on a flagpole on the school ground, the following procedure is suggested:

1. At a given time each school morning the Color Guard assembles at the entrance to the building. The Color Bearer gets the Flag. He carries the Flag folded. He carries it on his right forearm and next to the right breast. The Flag is properly folded when the final fold makes the shape of a triangle; all of the red and white stripes are inside, and only the blue field shows.
2. Color Guard advances in a shoulder to shoulder line toward the flagpole. They halt six feet from the pole.
3. All pupils on the playground stop playing and stand at attention, wherever they happen to be.
4. Color Bearer and Junior Color Bearers advance to the pole, attach the Flag, and raise it.
5. When the Flag is up and tied, the Color Guard and pupils on the playground are dismissed.
6. At the close of school the Color Bearer lowers, removes, folds, and places the Flag in the building.

THE AMERICAN'S CREED

By Wm. Tyler Page

I believe in the United States of America as a government of the people, by the people, for the people; whose just powers are derived from the consent of the governed; a democracy in a republic; a sovereign nation of many sovereign states; a perfect union, one and inseparable; established upon those principles of freedom, equality, justice, and humanity for which American patriots sacrificed their lives and fortunes.

I therefore believe it is my duty to my country to love it; to support its constitution; to obey its laws; to respect its flag; and to defend it against all enemies.

THE NATIONAL SONG

Officially adopted by Congress March, 1931, as our
National Anthem

Star-Spangled Banner

By Francis Scott Key

O say, can you see, by the dawn's early light,
 What so proudly we hail'd at the twilight's last gleam-
 ing,
Whose broad stripes and bright stars, through the perilous
 fight,
O'er the ramparts we watch'd, were so gallantly stream-
 ing?
 And the rockets' red glare, the bombs bursting in
 air,
 Gave proof through the night that our flag was still
 there.
O say, does that star-spangled banner yet wave
O'er the land of the free and the home of the brave?

On the shore, dimly seen through the mists of the deep,
 Where the foe's haughty host in dread silence reposes,
What is that which the breeze, o'er the towering steep,
 As it fitfully blows, half conceals, half discloses?
 Now it catches the gleam of the morning's first beam,
 In full glory reflected now shines in the stream;
'Tis the star-spangled banner—O long may it wave
O'er the land of the free and the home of the brave!

And where is that band, who so vauntingly swore,
 That the havoc of war and the battle's confusion
A home and a Country should leave us no more?
 Their blood has wash'd out their foul footsteps' pollu-
 tion;
 No refuge could save the hireling or slave
 From the terror of flight or the gloom of the grave,
And the star-spangled banner in triumph doth wave
O'er the land of the free and the home of the brave.

O, thus be it ever when freemen shall stand
Between their lov'd homes and the war's desolation!
Blest with vict'ry and peace, may the heav'n-rescued land
Praise the power that hath made and preserved us a
nation!

Then conquer we must, when our cause it is just,
And this be our motto: "In God is our trust."
And the star-spangled banner in triumph shall wave
O'er the land of the free and the home of the brave.

THE COLORADO STATE FLAG

Description of the Flag

The Colorado Flag has three stripes, white in the center and blue on either side. On the center left, covering the entire width of the white stripe and parts of the blue stripes, is a red circular letter "C". The center of "C" is filled with a circular, gold disc. The official state colors of Colorado, which are included in the flag, are designated with meanings as follows:

Red—"Colorado" means red in Spanish.

White—Stands for the greatest silver state; for eternal snow; and one of the columbine colors. (Columbine is the State Flower.)

Blue—Interprets the blue of the sky. It is one of the colors of the columbine.

Gold—Stands for the greatest gold state and for the year-round sunshine.

COLORADO STATE SONG

The official Colorado State Song is "Where the Columbines Grow." It was adopted May 8, 1915, by the Colorado Legislature. The words and music are by Dr. Arthur J. Fynn, a well-known Colorado educator.

Where the Columbines Grow

A. J. Fynn

Where the snowy peaks gleam in the moonlight,
Above the dark forests of pine,
And the wild foaming waters dash onward
Toward lands where the tropic stars shine;

Where the scream of the bold mountain eagle
Responds to the notes of the dove
Is the purple robed west, the land that is best,
The pioneer land that we love.

Chorus

'Tis the land where the columbines grow
Overlooking the plains far below
While the cool summer breeze
In the evergreen trees
Softly sings where the columbines grow.

The bison is gone from the upland,
The deer from the canyon has fled,
The home of the wolf is deserted,
The antelope longs for his dead,
The war whoop re-echoes no longer,
The Indian's only a name,
And the nymphs of the grove in their loneliness rove
But the columbine blooms just the same.

Let the violet brighten the brookside,
In the sunlight of earlier spring.
Let the clover bedeck the green meadow,
In the days when the orioles sing.

Let the goldenrod herald the autumn;
But under the mid-summer sky,
In its fair western home,
May the columbine bloom
'Til our great mountain rivers run dry.

COLORADO STATE BIRD

The Colorado State bird is the Lark Bunting. Adopted officially in 1931.

COLORADO STATE FLOWER

The white and lavender columbine was officially adopted as the State Flower in 1899. There are laws to protect the columbine from needless waste or destruction. A definite penalty is attached to such acts of destruction.

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